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Minnesota Medicine

MINNESOTA STATE MEDICAL ASSOCIATION

IN THIS ISSUE

January, 1961, Vol. 44, No. 1

MEDICAL SCIENCE

William F. X. Coffey, M. D.

Talbert Cooper, M. D.

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Jules S. Golden, M. D.

COMPLETE CONTENTS
Second and Third Pages

Minnesota

Contents for

SCIENTIFIC ARTICLES

ORIGINAL CONTRIBUTIONS

Blood Smears in Lymphoproliferative Disease
William F. X. Coffee, M.D., and *Talbert Cooper, M.D.,* Rochester, Minnesota 1

Palliation in Non Resectable Adenocarcinoma of the Cardia
John A. Culligan, M.D., St. Paul, Minnesota, *N. Kenneth Jensen, M.D., W. Robert Schmidt, M.D.,* Minneapolis, Minnesota 6

Traumatic Rupture of the Diaphragm
William O. Finkelnburg, M.D., Winona, Minnesota 13

The Clinical Use of a Permanently Implanted Bipolar Myocardial Electrode for Complete Heart Block
Samuel W. Hunter, M.D., Norman A. Roth, M.D., Karel Absolon, M.D., J. Lawrence Noble, M.D., St. Paul, Minnesota 16

Gasserian Compression for Trigeminal Neuralgia
Robert L. Merrick, M.D., St. Paul, Minnesota 20

A Traumatic Syndrome — Recognition and Treatment
Jules S. Golden, M.D., Minneapolis, Minnesota 24

SPECIAL ARTICLES

Arthur D. Wells, M.D.—An Appreciation 27

Carl O. Rice, M.D.—New Editor-in-Chief 30

Minnesota Medicine Represents

Duluth Surgical Society
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Minn. Society of Clinical Pathology

Medicine

January, 1961

Volume 44

Number 1

MISCELLANEOUS ARTICLES

EDITORIALS

Editor-in-Chief
Carl O. Rice, M.D. 31

Therapy of Complete Heart Block
Reuben Berman, M.D. 31

Surgeons Review Ethical Practices
Carl O. Rice, M.D. 31

PRESIDENT'S LETTER

Relative Value Study 34

MEDICAL ECONOMICS

Physician Hospital Admission Practices 36

Doctors, Insurance Companies Unite to Hold Medical Cost 37

Group Medical Practices Show Rapid Growth in U. S. 38

THE ART OF MEDICINE 39

MINNESOTA BLUE SHIELD A-45

MEDICAL EDUCATION A-46

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS A-48

WOMAN'S AUXILIARY A-49

IN MEMORIAM A-51

MEETINGS AND ANNOUNCEMENTS A-53

THE PHYSICIANS DIARY A-55

CLASSIFIED ADVERTISING A-60

INDEX TO ADVERTISERS A-61

Minn. Society of Internal Medicine
Minn. Society of Neurol. & Psych.
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The original intent of this study was to see if diagnostic "lymphosarcoma cells" could be found in peripheral blood. Such cells were not seen. However reticular lymphocytes were found in almost one third of patients who had malignant lymphoma or lymphatic leukemia. The presence of such cells suggests the possibility of lymphosarcoma or leukemia.

BLOOD SMEARS in Lymphoproliferative Disease

WILLIAM F. X. COFFEY
TALBERT COOPER
Rochester, Minnesota

MORPHOLOGICALLY specific cells appearing in the peripheral blood of patients who have lymphoproliferative disease have been reported for many years.[1-3] If characteristic cells appear consistently in the peripheral blood of patients with lymphosarcoma, their recognition should have diagnostic significance. Attempts to define malignant lymphoma, leukosarcoma and leukemia and to establish their relationships to one another are largely hypothetic, since there is evidence suggesting their fundamental identity.[4,5] However, such classifications are widely employed, being based on combinations of clinical features, hematologic characteristics and anatomic findings.

The close relationships between lymphocytic leukemia and lymphosarcoma have been noted repeatedly. The differentiation of these two entities is often impossible on the basis of histopathologic changes in the lymph nodes alone; the distinction usually is based on evaluation of clinical features and concurrent study of peripheral blood and bone marrow. The term "leukosarcoma" connotes the appearance of "leukemic" cells in the peripheral blood of patients who have lymphosarcoma.

Leukosarcoma has been a controversial entity since Sternberg introduced the concept in 1908. He considered it to be a type of lymphatic leukemia. After extensive review of the early literature, Watson[6] concluded that the disorder described by Sternberg should be included in the leukemias as a systemic disease. Characteristic changes in the peripheral blood were not observed in lymphosarcoma, which is a neoplastic disturbance that often appears to be of unicentric origin.

Berman's[7] classification of the lymphomas included leukemic phases in the different types of lymphosarcoma. He thought that the lymphoblastic lymphoblastomas are derived from reticulum cells and include the reticular lymphocyte of Sundberg. Gall and Mallory[8] regarded lymphosarcoma as a transient phase of malignant lymphoma and considered lymphatic leukemia as a manifestation of an underlying lymphomatous process.

Isaacs[2] described a "lymphosarcoma" cell in peripheral blood studied on coverglasses and stained by a combination of brilliant cresyl blue and Wright's stain. A "characteristic" eccentric and usually single nucleolus, which stands out as a sky-blue structure because it is surrounded by a deep blue-black rim of chromatin, was distinguished. The chromatin was reticular but was thickened at the edge to form a definite nuclear wall. The sparse cytoplasm was basophilic and appeared as a fine blue lacy network.

Abridgement of thesis submitted by Dr. Coffey to the Faculty of the Graduate School of the University of Minnesota in partial fulfillment of the requirements for the degree of Master of Science in Medicine.

The Mayo Foundation, Rochester, Minnesota, is a part of the Graduate School of the University of Minnesota.

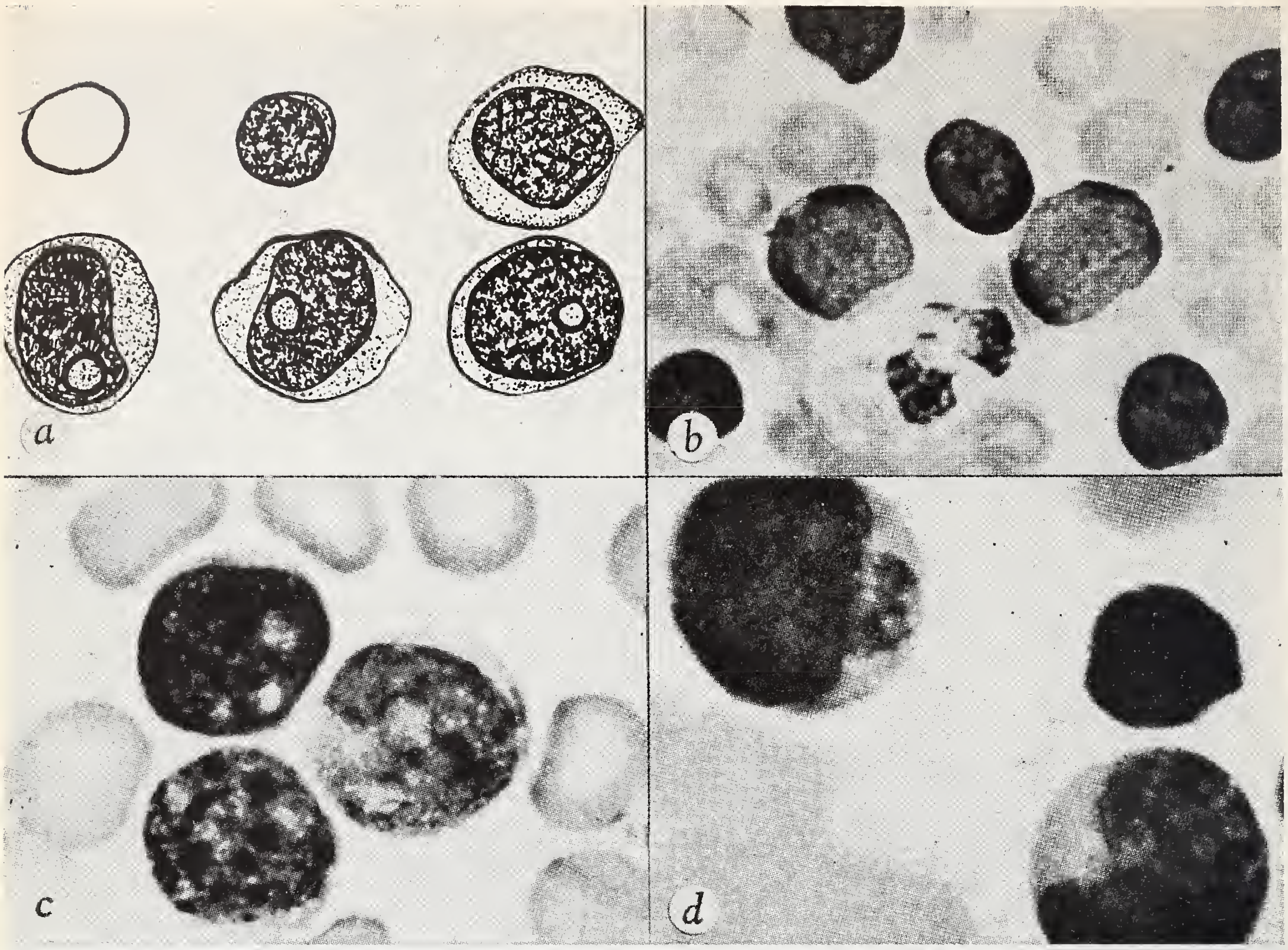

Fig. 1. a. Drawings of Isaacs' lymphosarcoma cell. The three lower cells are lymphosarcoma cells compared (above) with an erythrocyte, a small lymphocyte and a large lymphocyte. (Reproduced with the kind permission of the publishers from Isaacs.[2]) b. Bethell's illustration of lymphosarcoma cells from a patient with subacute lymphosarcoma cell leukemia. (Reproduced with the kind permission of the publishers from Bethell.[3]) c. Custer's illustration of cells regarded as lymphoblasts from a patient with lymphosarcoma. (Reproduced with the kind permission of the publishers from Custer.[9]) d. Lymphosarcoma cells in the peripheral blood. (Reproduced with the kind permission of the publishers from Rappaport and co-workers.[10])

The diameter varied from 7.5 by 9 microns to 12 by 13.5 microns (fig. 1a). Bethel [3] reported that 70 of 190 cases of lymphogenous leukemia represented "lymphosarcoma cell leukemia" on the basis of Isaacs' criteria (fig. 1b). Custer's[9] atlas illustrates monocytoid tumor cells in the peripheral blood of a patient who had follicular lymphoblastoma and shows lymphoblasts in the peripheral blood of a patient with malignant lymphoma of the lymphosarcoma type (fig. 1c). He thought that the blood picture may result from spillage of tumor cells.

Rappaport and associates[10] found that abnormal lymphocytes (fig. 1d) accounted for 3 to 84 percent of the total number of leukocytes in 23 of 35 patients who had giant follicular lymphoma. The presence of these cells was taken as an indication of leukemia even though the total lymphocyte counts were within or less than the normal range.

Cooper and Watkins[11] noted atypical and immature lymphocytes in the peripheral blood and bone marrow in five of seven patients who had lymphoblastic lymphosarcoma. Four morphologic types of atypical lymphoid cells were observed in this relatively small series, suggesting that no single type of cell characterizes all cases of lymphosarcoma.

Dameshek and Gunz[5] have used the term "leukosarcoma" as a generic one to include all localized neoplastic proliferations of leukocytic tissues in distinction to leukemia, which is a generalized proliferation of leukocytic tissues.

Thus, the literature includes reports of leukemia "developing" or occurring in association with various types of lymphosarcoma but indicates no universal agreement regarding the relationship of leukemia to lymphoma or the appearance of specific cells in the peripheral blood of patients with malignant lymphoma. In the present study, the term "malignant lymphoma" includes lymphocytic and lymphoblastic lymphosarcoma, Hodgkin's disease, reticulum cell sarcoma, giant follicular lymphoma and mycosis fungoides.

Present Study

A search for "lymphosarcoma cells" was made in smears of peripheral blood of patients examined at the Mayo Clinic during a 4-month period. Blood smears were collected from all patients presenting any clinically suggestive evidence of lymphocytic disease. An approximately equal number of smears from other patients were obtained in sequence; on completion of the blood-smear examinations, the records of these patients were reviewed in an attempt to correlate the findings on blood smears with the final diagnosis. A "wet" smear for reticulocytes was made by mixing a drop of brilliant cresyl blue with a drop of blood before spreading. The smear then was stained by Wright's method. This modification of the "dry" coverglass procedure described by Isaacs was employed because it facilitated the examination of a large number of smears. The coverglass technic is not used routinely in our laboratory.

Smears of peripheral blood from a total of 207 patients were examined in the first part of this study. These patients (group 1) were selected on the basis of any suggestive clinical evidence of lymphocytic disease, such as lymphadenopathy, splenomegaly or lymphocytosis. The final diagnoses in this group included 49 patients with malignant lymphoma, 19 with chronic lymphatic leukemia and 13 with acute lymphatic leukemia. The remaining 126 patients had such diseases as acute and chronic granulocytic leukemia, monocytic leukemia, leukemic reticuloendotheliosis, infectious mononucleosis, nonspecific hyperplasia of lymph nodes, cirrhosis, diabetes, pernicious anemia, carcinoma, rubella, psychoneurosis, peptic ulcer, hernia, hepatitis and influenza.

Blood smears from 225 additional patients (group 2) were obtained sequentially and studied as controls. The final diagnoses in this group included 15 patients with lymphoma and 10 with chronic lymphatic leukemia. The remainder of the smears in this group were from patients who had miscellaneous medical problems, including some with no evidence of significant organic disease.

Cells satisfying Isaacs' morphologic criteria for the "lymphosarcoma cell" were not observed in smears treated with both reticulocyte and Wright's stains or with Wright's stain alone. Cells thought to be reticular lymphocytes of the type described by Sundberg[12] were prominent in the differential counts. This cell is about three times the diameter of an erythrocyte. The nucleus is large, occupying about four fifths of the cell. The chromatin structure is loose (reticular) but is coarse enough to resemble the chromatin clumping of the lymphocyte. Several nucleoli were always present in the cells we found, and sometimes they were quite distinct. The cytoplasm usually was dark blue, sometimes approaching the distinctive color of the cytoplasm of plasma cells. It usually was homogeneous, but sometimes it contained vacuoles.

Such reticular lymphocytes were found in the blood smears of 12 of the 49 patients in group 1 with malignant lymphoma and in one of the 15 patients in group 2 who had malignant lymphoma. Such cells were present in seven of the 19 patients in group 1 with chronic lymphatic leukemia and in two of the 10 patients in group 2 with the same type of leukemia. Ten of the 13 patients in group 1 who had acute lymphatic leukemia showed reticular lymphocytes. Of the 126 remaining patients in group 1, none of whom had malignant lymphoma or lymphatic leukemia, 10 had smears in which reticular lymphocytes were present. Reticular lymphocytes were found in seven of the 200 remaining patients in group 2, none of whom had lymphoproliferative disease. Thus, these reticular cells were present in 30 percent of our patients who had malignant lymphoma or lymphatic leukemia and in only 5 percent of the patients without these diseases. When reticular lymphocytes were present, their numbers ranged from 2 to 20 percent of the total lymphoid cells present.

Because of the similarity of reticular lymphocytes to the cells described by Isaacs, several of these cells were photographed for com-

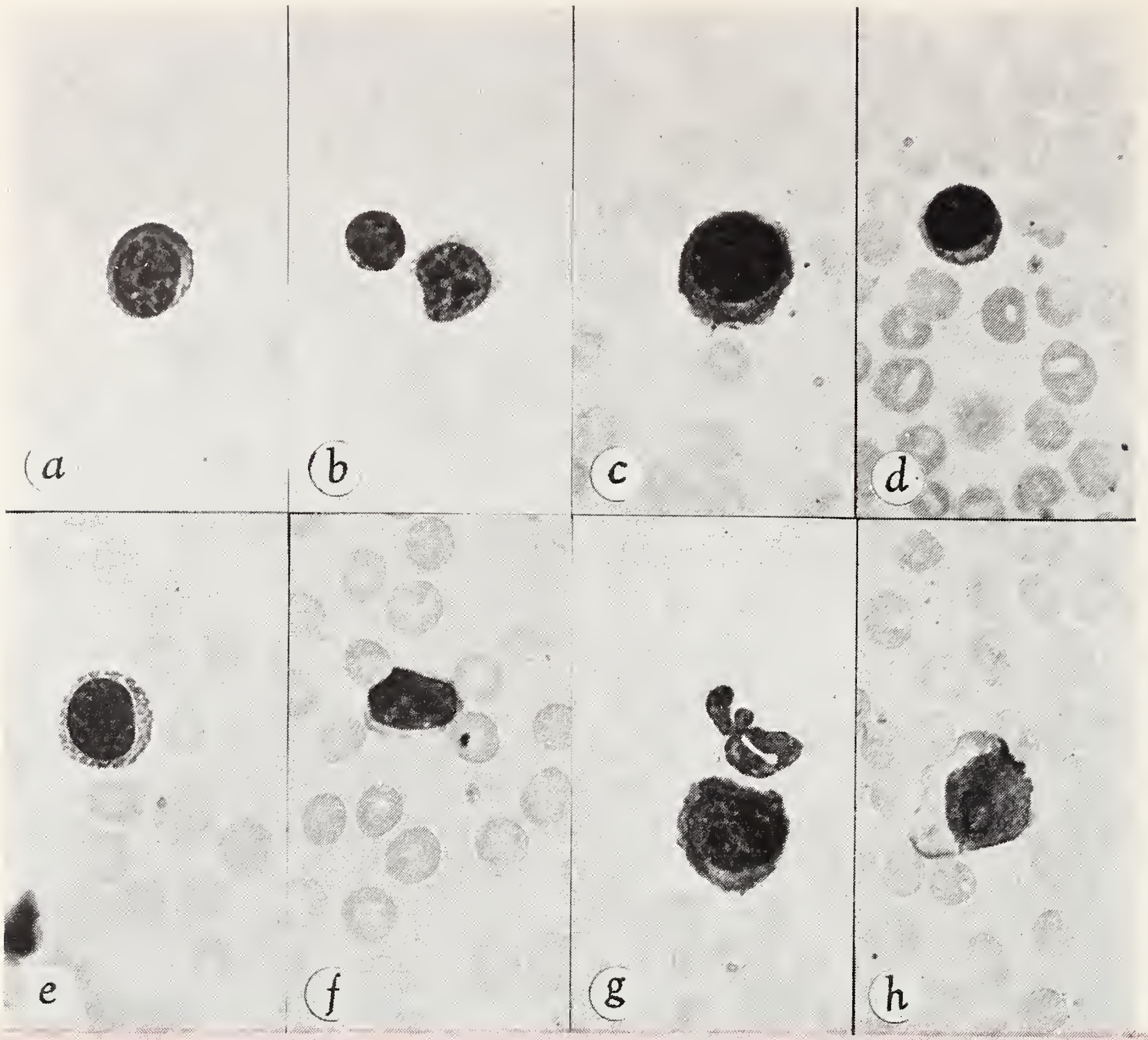

Fig. 2. Reticular lymphocytes from various patients (reticulocyte-Wright's stain; x1000). a. From a patient with acute lymphatic leukemia. b. From a patient with acute lymphatic leukemia. A normal lymphocyte is included. c. From a patient with leukemic reticuloendotheliosis. d. From a patient with esophageal hiatal hernia. e. From a patient with ovarian carcinoma. f. From a patient with chronic lymphatic leukemia. g. From a patient with rubella. A neutrophil is included. h. Cell believed to be a reticular lymphocyte from a patient with overt leukemia originally diagnosed lymphoblastoma in 1956 on basis of lymph-node biopsy.

parison with other reported cells of "lymphosarcoma" of the leukosarcoma type (fig. 2). We could not find any abnormal or atypical types of cells with diagnostic frequency in any of the different types of malignant lymphomas, if those patients in a grossly "leukemic" phase are excluded.

Because of Isaacs' finding of "tumor" cells in the peripheral blood in "lymphosarcoma cell leukemia" and because of the relationship of lymphatic leukemia to malignant lymphoma, we attempted to find similar cells in the peripheral blood of patients who had various other types of lymphoproliferative disease. The type of cell described by Isaacs was not identified in our material. Reticular lymphocytes were found with greater frequency in these diseases, but they hardly can be considered as "tumor" cells because morphologically similar cells were found in smears from patients without other evidence of malignant lymphoma or leukemia.

Comment

Because nucleoli are seen, Sundberg[12] noted that reticular lymphocytes must be distinguished from the lymphoblasts of acute leukemia. Since reticular lymphocytes contain nucleoli and may exhibit a fine nuclear pattern, they sometimes are mistaken for lymphoblasts, and erroneous diagnoses of leukemia are made.

Sundberg stated that reticular lymphocytes are merely immature lymphoid cells that may occur in any hyperplastic lymph node or, when in the peripheral circulation, usually are simply the result of a benign left shift in lymphogenesis. A notable exception is lymphatic leukemia, in which a few cells showing some evidence of reticular origin almost always can be found.

In a later publication, Sundberg[13] described immature lymphocytes as having a narrow rim of pale or deep-blue cytoplasm, usually homogeneous. The nucleus may have visible nucleoli and delicate chromatin, but the chromatin is sufficiently coarse, damaged or smudged to indicate that the cell is the precursor of lymphocytes. These cells may occur in the lymph nodes, bone marrow and blood of normal infants and children and of patients who have benign lymphocytic reactions or lymphatic leukemia. She stated that reticular lymphocytes are found in the blood of patients with leukemic reticuloendotheliosis, infectious mononucleosis, brucellosis, and some forms of hemolytic anemias and of patients who have conditions associated with plasmacytosis or eosinophilia. When plasma cells are present in large numbers, as in serum sickness, rubella and infectious hepatitis, they are often associated with lymphocytic reactions with leukocytoid changes and, occasionally, reticular lymphocytes. One of our patients, who had rubella, presented the following percentages in the differential leukocyte count: neutrophils, 44; lymphocytes, 33.5; monocytes, 3.5; eosinophils, 3.5; basophils, 0.5; plasma cells, 10; reticular lymphocytes, 5. A reticular lymphocyte from this patient is illustrated (fig. 2g).

As previously stated, cells with a large single nucleolus and a heavy blue-black rim of chromatin, which Isaacs considers as characteristic of lymphosarcoma cells, were not identified in this study. However, the cells we have illustrated are similar to those of his description, at least superficially, because of the reticular nature of the nucleus and the presence of nucleoli. They differ in that they lack the eccentric nucleolus surrounded by the deep blue-black rim of chromatin that Isaacs stressed as characteristic of such cells. Although the nuclear wall of the reticular lymphocyte is distinct, it does not appear to be thickened. Another important difference is size; reticular lymphocytes are about twice the size of Isaacs' "lymphosarcoma" cell.

That nucleoli occur in mature lymphocytes has been demonstrated by various technics. Yoffey and Hanks[14] pointed out that nucleoli will stain supravitally with brilliant cresyl blue. Because this dye stains basophilic ribonucleoprotein and since the ribose nucleic acids of the nucleolus and cytoplasm, together with the chromatin associated with the nucleolus (heterochromatin), appear to be closely related to the proliferation of young cells, it is not surprising to find this material in young lymphoid cells. Therefore, the appearance of nucleolated nuclei in lymphocytes or lymphoid cells does not appear to justify their classification as tumor cells.

If "tumor" cells from lymphosarcoma do gain access to the peripheral blood, their proper identification must depend on criteria other than those used heretofore. If lymphatic leukemia and lymphosarcoma are essentially the same disease process observed in different phases, the appearance of tumor cells common to both is to be expected. The diagnosis of a "reticular lymphocytic leukemia" was not considered justified in this series, since the reticular lymphocyte was never the predominant type of cell in the cases of leukemia studied.

Summary and Conclusions

Blood smears from 432 patients were examined in a search for "lymphosarcoma" cells. A distinctive type of cell was not recognized. However, reticular lymphocytes having some morphologic similarities to the "lymphosarcoma cell" of Isaacs were the most frequently observed unusual cells in cases of lymphosarcoma. These reticular lymphocytes were noted in 30 percent of the patients who had malignant lymphoma or lymphatic leukemia and in only 5 percent of the patients without these diseases.

This study suggests that the presence of significant numbers of reticular lymphocytes in the peripheral blood of patients who do not have a clearly defined blood picture of leukemia may be a clue to the diagnosis of lymphosarcoma or leukemia. The presence of immature or atypical lymphocytes was not sufficient to warrant a confident diagnosis of a lymphoproliferative disease, but such findings may suggest this possibility.

See References — Page 19

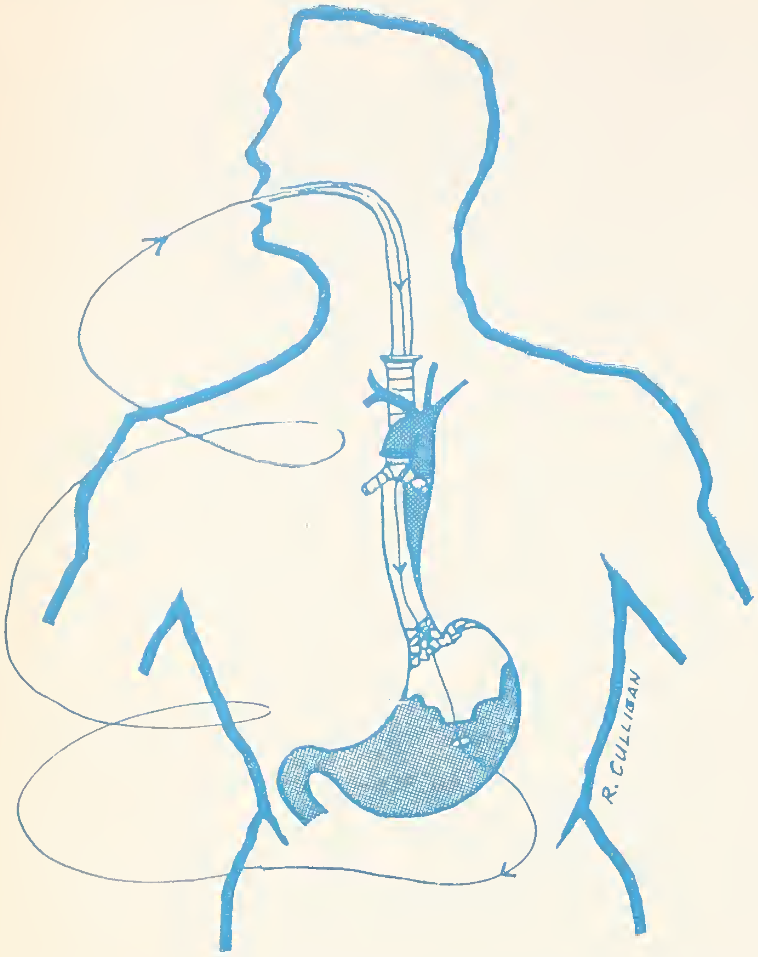

Fig. 1. A #2 silk string has been washed through the esophagus. It has been retrieved via the gastrostomy with the aid of a short bronchoscope.

Palliation

JOHN A. CULLIGAN, M.D.
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N. KENNETH JENSEN, M.D.
W. ROBERT SCHMIDT, M.D.
Minneapolis, Minnesota

Non-resectable carcinoma of the esophagus is a miserable disease, and its victims are a desperate lot. Unable to swallow, the patient loses quantities of weight and strength, and is harassed by a continuing cough from regurgitated secretions. Death is usually due to starvation complicated by chronic aspiration pneumonia. The patient's family are in the disagreeable position as spectators at the grim drama. Unable to do anything to improve the sorry state of one very close, the family often becomes restive, and seeks out for anyone who promises to do something. Frequently this serves to lead the patient away from those who can be of real assistance. It is the physician who must support, maintain and encourage these patients throughout their illness. In addition, the physician must give to the family wise counsel, in order that its energies may be properly channeled. In this way whatever remains of life for the patient is spent in a productive manner, not frittered away seeking illusory remedies serving to deplete emotional and financial resources, when conservative expenditure of both is most in order.

In the light of poor survival figures following surgery, and in view of the pathetic picture presented by the patient himself, it is easily understood why pessimism regarding this disease exists among the medical profession. It is unfortunate however, that this feeling has engendered in many of us an attitude of thera-

Cancer obstructing the esophagogastric junction presents special problems of nutrition and debility through regurgitation and aspiration of secretions. Because of the poor prognosis pessimism has reigned supreme leading to therapeutic nihilism. The method described herein is a significant contribution in the palliation of this neoplasm.

in Non-Resectable Adenocarcinoma of the Cardia

description of a new technique

peutic nihilism, a conviction that there is nothing to be done to make the final months of these patients more tolerable. Often nothing is attempted in a patient with a non-resectable lesion, and he is left to starve, or to drown, in the belief that this is inevitable. Recent work leads us to take an opposite view, and we wish to present a method of management which has worked well in our hands to prolong both the quality and quantity of life remaining for patients afflicted with non-resectable adenocarcinoma of the cardia.

Scope of the Problem

In the present writing no attempt was made to determine whether the tumors in question were truly esophageal adenocarcinomas, or were in fact gastric carcinomas having their origin high in the fundus of the stomach. It was enough for our purposes to ascertain that the lesions were adenocarcinomas, and that they did involve the cardia and the lower esophagus.

The surgical management of both adenocarcinoma and squamous cell carcinoma of the esophagus is being reevaluated in the light of technical developments of the last ten years. Small series of cases have been reported (Robertson and Sargeant,[1] Scanlon et al,[2] Sherman et al,[3] Watson et al[4]) wherein total esophagectomy with subsequent alimentary reconstruction by means of substernal esophagocologastrostomy has been offered as a more definitive operation for esophageal carcinoma. Insufficient time has elapsed to evaluate the efficacy of this procedure, and the survival rates will be of great interest when they become available. No matter what procedure becomes the operation of choice for resectable lesions, there remain vis a vis that proportion of the total number which is either inoperable or non-resectable. This proportion is higher than is generally appreciated.

In reviewing 909 cases of esophageal carcinoma seen at the Mayo Clinic from 1946 through 1955, Ellis et al[5] found that fifty percent of all esophageal cancers involved the esophagogastric junction. Disregarding those lesions in which no histologic diagnosis was made, in which the diagnosis was on the basis of cytology, or in which the tumor was not fully classified, 89% were adenocarcinomas. One may conclude that adenocarcinomas of the cardia account for 44.8% of all esophageal carcinomas. The resectability rate varied during the period of the study, being higher in the more recent five year period. The rate ranged from 25.8% to 50.5% with an average for the ten year period of 36.9% Other large series of cases (Allison,[6] Sweet,[7] Cox,[8] Mustard,[9] Garlock,[10] Sondergaard,[11] Adams[12]) are in general accord with the series of Ellis. It may be well to note that early diagnosis does not necessarily mean that one is dealing with a lesion having a favorable prognosis. Palmer[13] cites 8 cases of carcinoma of the lower third of the esophagus, either diagnosed while still asymptomatic, or within nine days of the onset of symptoms. Five of the eight were inoperable or were non-resectable at surgery, even though they should have been "early" lesions.

It becomes apparent that adenocarcinomas of the cardia account for almost fifty percent of all esophageal carcinomas, that the chances of such a lesion being non-resectable range between 50 and 75%, and that promptness in diagnosis once the lesion becomes symptomatic does not necessarily auger a favorable outlook.

Brief mention should be made regarding roentgen therapy in the treatment of esophageal carcinoma. Buschke[14] and Nielsen[15] have reported results with X ray therapy rivaling the figures for resective surgery both in terms of cure and of palliation. Both feel that once epidermoid carcinoma involves lymph nodes there is no chance for cure, though sometimes effective palliation can be achieved. Both authors believe adenocarcinoma of the cardia to be completely radioresistant, and not at all amendable to roentgen therapy. Cox,[8] on the other hand, has treated a small number of adenocarcinomas with megavoltage apparatus (The 4 million electron volt linear accelerator, the 2 million electron volt Van de Graff apparatus, and the 2000 Curie telecobalt unit). He suggests that a very small proportion of adenocarcinomas of the cardia may be palliated using these modalities.

Palliative Methods

The large proportion of non-resectable lesions has led to the development of various stents which can be placed within the esophagus to provide an intact passage through the obstructing tumor. Souttar,[16] in 1922, reported the use of a flexible rubber tube wound round with german silver wire, introduced perorally with the aid of an esophagoscope. Brown,[17] in 1949, advocated the use of a rigid silver tube introduced from below the tumor at laparotomy, which was held in place by a cellophane band tied around the esophagus below the tumor. In 1954 Mackler[18] introduced a semirigid polyvinyl flanged tube placed through the tumor via esophagotomy at the time of thoracotomy. The tube was held in place by a silk tie about the esophagus above the flange of the tube. Coyas[19] subsequently devised a plastic tube with external threadings designed to be screwed through the tumor via an esophagoscope. A somewhat similar tube was fashioned by Sachs.[20] Weisel[21] also has used a flanged polyethylene tube which is introduced perorally. His tube can be tailored any length, to correspond to the length of the esophageal lesion. All of these techniques have merit, and without exception their use has resulted in palliation.

Yet all of these methods have inherent disadvantages. When one introduces a stent via an esophagoscope without a guide string, one runs the risk of creating a false passage with subsequent mediastinitis and/or peritonitis. Moreover, we desired a method which would provide more secure fixation of the stent within the tumor. The flange at the upper end of most of the stents functions to keep the tube from passing down into the stomach. However, despite external threadings or encircling silk ties above the tumor, several authors reported that tubes were occasionally regurgitated. We desired a tube that was commercially available, and which led to little reaction within the esophagus. We settled on the Mackler tube manufactured by the Davol Rubber Company.*

---

*The Davol Rubber Company
Providence 2, Rhode Island

These tubes are made of polyvinylchloride and are available in four sizes. All are 4¾ inches long and have a flange diameter of one inch. The largest size has internal diameter of 37 french. By combining the largest Mackler tube with an appropriate sized Tucker dilator, we have evolved a technique for the peroral placement of a tube along a guide string, and a method for anchoring the tube in place from below.

In handling these patients we feel that laparotomy is almost always indicated, as only in this way can full advantage be taken of the benefits of palliative resection. Only severe medical complications dissuade us. Having entered the abdomen, the lesion is carefully explored and the feasibility of resection is decided. If the lesion is found to be nonrestable, the reason is usually direct extension of the tumor into the aorta or the celiac axis. When non-resectability is determined the lesion is subjected to biopsy, a Stamm gastrostomy is fashioned, and the abdomen is closed. The permanent stent is not necessarily introduced at the time of surgery nor indeed during the first few months thereafter. It has been our experience that dysphagia is often minimal initially, and that it can be handled well for some time by the use of Tucker dilators pulled up the esophagus via the gastrostomy by a string which the patient has swallowed previously. We find that the retrograde dilations are tolerated more easily than peroral dilation with Plummer bougies. As the retrograde dilatations become progressively less effective in maintaining reasonable deglution, the point is reached where the permanent plastic prosthesis must be introduced. The gastrostomy and the swallowed string are both used in the placement of the prosthesis.

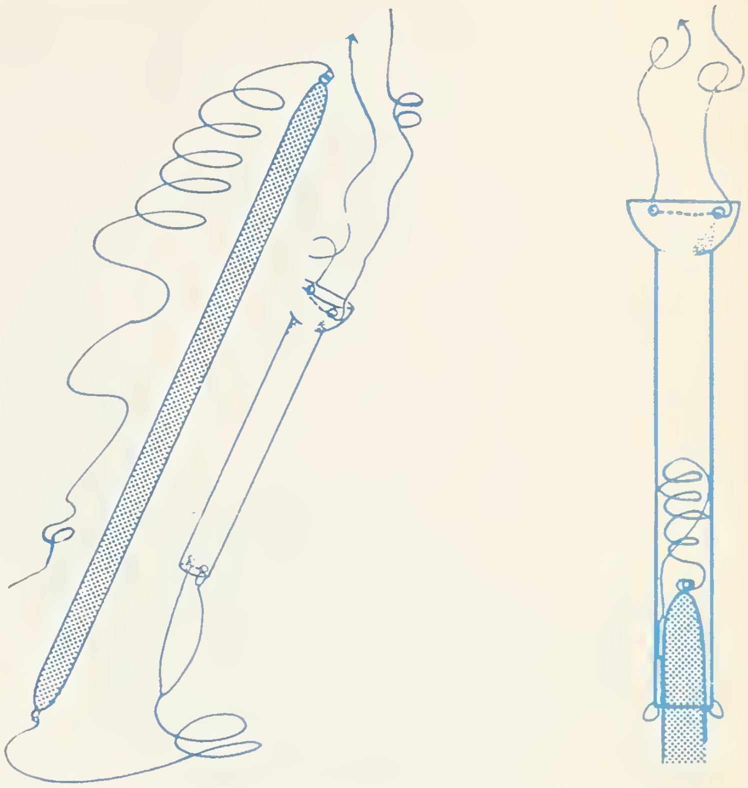

Fig. 2. Left: the proximal end of the Tucker dilator has been joined to the leading end of the Mackler tube by a twelve inch length of #2 silk. Right: the proximal end of the Tucker dilator has been impacted into the leading end of the Mackler tube. A #2 silk has been passed through two small holes cut in the flange of the Mackler tube.

After appropriate premedication the patient is placed supine on the operating table under endotracheal anesthesia. A fresh #2 silk string is pulled through the esophagus (figure 1), and the esophagus is dilated one last time with Tucker dilators. The largest Mackler tube is joined to an appropriate Tucker dilator by 12 inches of #2 silk, as illustrated in figure 2. The proximal end of the Tucker dilator, with its attached string, is then impacted into the leading end of the Mackler tube (figure 2). The leading end of the Tucker dilator is tied to the silk string coming from the patient's mouth. Two 3mm holes are cut in the flange of the Mackler tube, a #2 silk string is passed through the holes, and both ends are held. The anesthesiologist is requested to deflate the balloon of the endotracheal tube, so that the distended bag will not impinge upon the esophageal lumen, and lead to premature separation of the Tucker dilator from the Mackler tube. Then, using a combination of traction on the silk string coming from the gastrostomy, and careful pushing of the combined Mackler tube and Tucker dilator, the prosthesis is worked down the esophagus until the flange seats itself upon the upper extent of the tumor. This does not occur until approximately six inches of the Tucker dilator protrudes through the gastrostomy (figure 3). The correct placement of the prosthesis is of paramount importance, and somewhat to our surprise has presented little difficulty. Once satisfied that the Mackler tube is in good position, steady traction is exerted on the doubled string coming from the mouth, and the Tucker dilator is pulled until the Mackler tube and the Tucker dilator separate. The Tucker dilator emerges from the gastrostomy trailed by the twelve inch length of silk attached to the leading end of the Mackler tube. This string is cut and fastened to a button at skin level immedi-

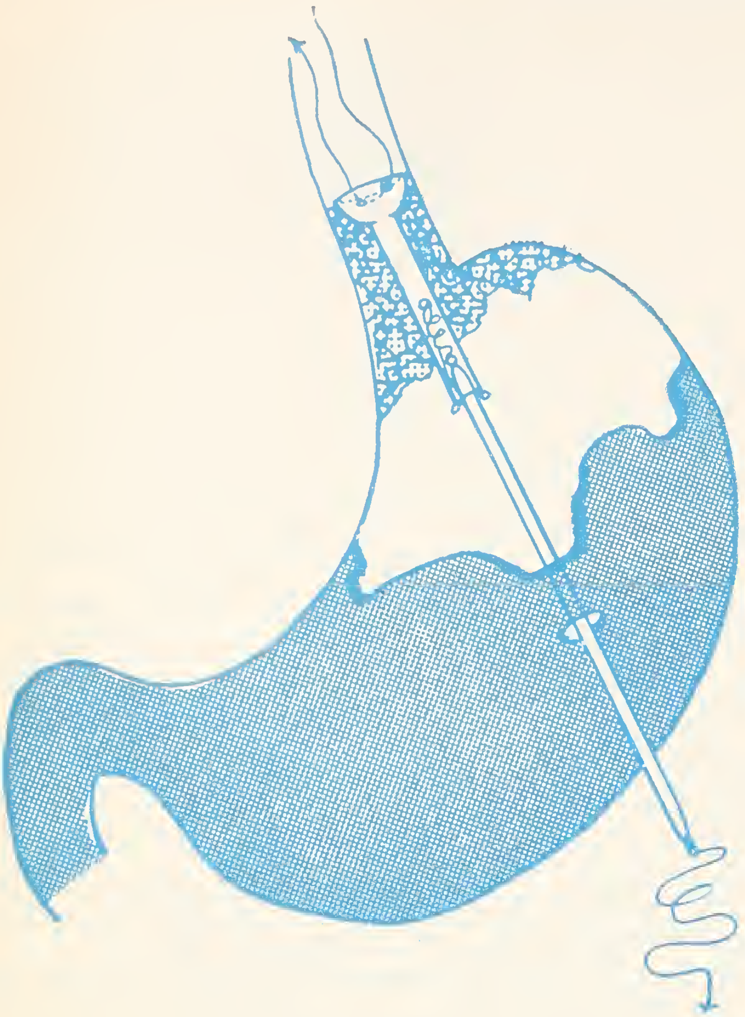

Fig. 3. The Mackler tube is properly seated through the tumor. The leading end of the Tucker dilator protrudes through the gastrostomy. Traction on the Tucker dilator with countertraction on the doubled string coming from the patient's mouth disimpacts the Tucker dilator and the Mackler tube.

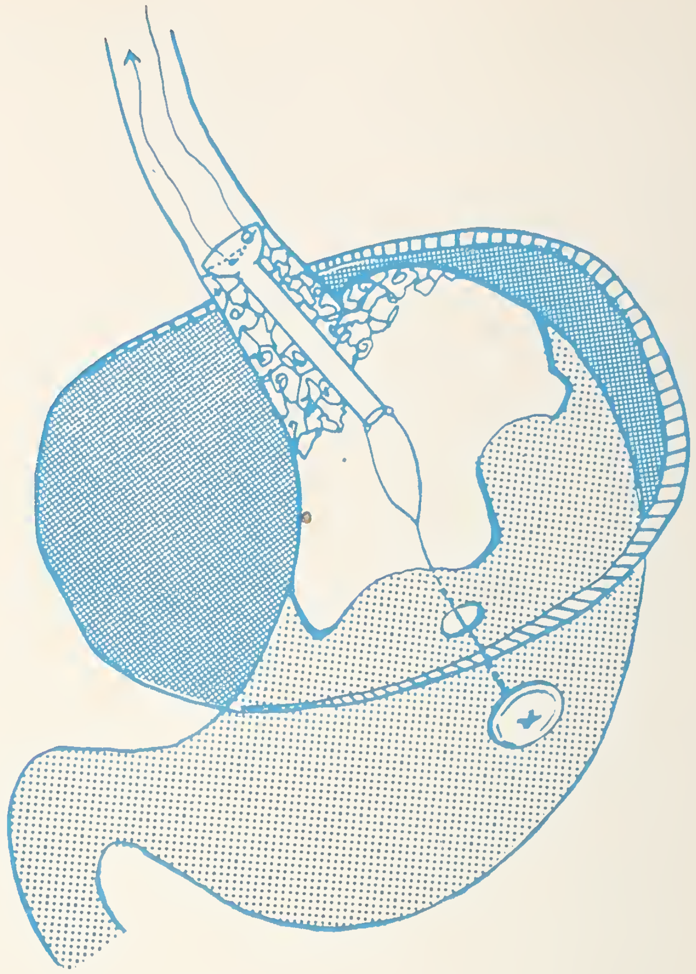

Fig. 4. The Mackler tube is in place. The string emerging from the gastrostomy has been tied over a button. Traction on one end of the proximal doubled string pulls it from the mouth, and it is discarded.

ately adjacent to the gastrostomy (figure 4). Traction on one end of the doubled string coming from the mouth pulls the string through the small holes in the flange of the Mackler tube, and it is removed and discarded.

In this way the Mackler tube is worked into proper position through the tumor along a guide string, making perforation of the esophagus extremely unlikely. In addition, the distal string tied over a button at the gastrostomy site makes the possibility of regurgitation of the tube very remote. We have found that the gastrostomy stoma closes around the string within two weeks to a point where there is no leakage of gastric content onto the skin.

Case Reports

Case No. 1

(C.N., N.W.H. #435179) was a 57 year old male who consulted his physician for the first time in February, 1958 with dysphagia of three months duration. He had lost from 150 pounds down to 128 pounds. Esophageal X rays disclosed a large lesion in the lower third of the esophagus. Left thoracotomy on February 19, 1958 confirmed the presence of carcinoma. The growth measured 6x7x7 cm, and was judged non-resectable by virtue of invasion of the anterior surface of the aorta. The lesion was biopsied, and a Stamm gastrostomy was fashioned. Histologic examination disclosed a grade 2 adenocarcinoma. Following surgery the patient was able to wash a string (#B buttonhole twist silk) through the esophagus, and it was retrieved from the stomach with a short bronchoscope. Retrograde dilatations with the Tucker dilators through 32 french were done at semi monthly intervals. In April 1958, hospitalization was required for a febrile illness accompanied by left lower chest pain and a localized pleural effusion due to spontaneous perforation of the lesion with attendant localized mediastinitis. By August 1958 it was noted that the patient was unable to get much food through the esophagus despite easy passage of the dilators. It was thought that the fungating tumor would spread apart to admit the dilator, but would close back together when the dilator was removed. For the succeeding three months the patient was maintained by gastrostomy feedings and what little he could swallow. On December 8, 1958. a Mackler tube was placed. Full liquids were instituted the next day, and shortly thereafter no no limitatition was placed on the character of his food as long as it was cut into small pieces and chewed well.

He ate without difficulty, experienced no heartburn, and gained twenty pounds. The improvement in his mental attitude was notable. He remained well until March 14, 1959, when there was the sudden onset of left hemiplegia. The patient was admitted to the hospital where he expired quietly on March 18, 1959. Post mortem examination disclosed that the tumor occupied the entire fundus and lower 6 cm of esophagus. The tumor mass measured 12 cm in diameter. Tumor nodules were present in the abdominal wall about the gastrostomy site, and in the liver, the lungs were not involved by tumor, but antemortem blood clots were present in both right and left pulmonary arteries. Permission to examine the brain was not obtained.

In summary, this man was maintained in reasonably good condition for thirteen months following thoracotomy for a non-resectable adenocarcinoma of the cardia. His condition was materially improved during the last three months of his life when a Mackler tube was in place.

Case No. 2

(H.F., St.B.H. # SB1695) was a 62 year old male who consulted his physician in June 1958, with constant pain in the left lower chest. X rays of the area disclosed an osteolytic lesion in the left eighth rib expanding the bony cortex. Physical examination disclosed nothing of note, and chest, esophageal, stomach, colon and kidney X rays were reported within normal limits. On June 18, 1958, excision of the eighth rib with its adjacent muscle bundles was carried out. Histologic examination disclosed the presence of metastatic anaplastic carcinoma. The patient was seen again in November 1958, with dysphagia. X rays of the esophagus disclosed an obstructing lesion at the cardia. The patient was able to swallow a string, and peroral dilatations with Plummer bougies were carried out through January, 1959. The dilatations were not very beneficial, and he lost from his normal 150 pounds to 118 pounds. On January 26, 1959, Stamm gastrostomy was fashioned, and a large Mackler tube was pulled through a tumor of the cardia which was producing a high grade obstruction. During exploration large tumor masses were palpable within the liver. Following surgery the patient was able to eat any food which was cut into small pieces and chewed well. Heartburn was not noted. He gained seven pounds, was up and around at home, but noted anorexia and fatigue. It was felt that his failure to gain further weight and strength related to his widespread malignant process. On March 13, 1959, while at nome, hemmorrhage into the upper gastrointestinal tract began. Voluminous hematemesis and melena were noted. On that date he expired at home. A post mortem examination was not obtained.

In summary, this man lived nine months following the diagnosis of metastatic carcinoma to a rib, the primary carcinoma in the esophagus becoming apparent five months prior to death. His situation was bettered in the three months preceeding death by the presence of a Mackler tube in his esophagus, which permitted him to swallow. Until the day of his death, he was up and about at home with his family.

Case No. 3

(R. C., F. V. H. # 340991) was a 67 year old male who underwent laparotomy in April, 1958 for signs of an acute abdomen. Thorough exploration by a competent surgeon disclosed nothing of note. In August, 1958, dysphagia was noted, and X rays disclosed a polypoid lesion in the lower esophagus. Laparotomy on August 27, 1958 disclosed a large tumor of the fundus and lower esophagus measuring 8x8x7 cm. The lesion was deemed non-resectable by virtue of direct spread into the celiac axis. A Stamm gastrostomy was fashioned and the abdomen was closed. Histologic examination disclosed the lesion to be an adenocarcinoma. For the next four months reasonable deglutition was maintained by the periodic use of Tucker retrograde dilators, but by November 1958 the dilatations were no longer beneficial. On December 29, 1958, a Mackler tube was inserted, and within 48 hours the patient was eating what amounted to a full range of food. By mid April he had gained back the thirty pounds he had lost. Heartburn was not noted. His only problem was anemia due to gastrointestinal bleeding which was slow but continuous. This necessitated semimonthly blood transfusions on an outpatient basis. Bone marrow examination in April 1959 failed to reveal tumor cells and it was concluded that the anemia was due to bleeding from the tumor. The patient continued to be active at home until June 5, 1959, when there was the sudden onset of massive hematemesis and melena. He expired within one hour. Post mortem examination was not obtained.

In summary, this man was maintained in good condition for ten months following a laparotomy for a non-resectable adenocarcinoma of the cardia. The Mackler tube functioned well for the last five months of his life, allowing him to eat almost a normal diet. Anemia due to chronic blood from the tumor was a problem, but was easily handled by blood transfusions on an ambulant basis.

Discussion

The survival of these patients following hospital discharge after a diagnosis of non-resectable adenocarcinoma of the cardia averaged eleven months. The average length of time during which the Mackler tube was in place was 3½ months. All three patients were able to eat an essentially normal diet until death occurred. Two of the patients gained weight back to normal levels. The tubes did not plug, in no case was a tube regurgitated, and no patient complained of heartburn. All three were up and about at home until shortly before death, and when death came it was precipitous and painless. Certainly this represents effective palliation when compared with the 91 cases of non-resectable esophageal carcinoma reported by Wu and Louck.[22] In their series the average survival time was 2.6 months following hospital discharge.

It must be emphasized that we are in complete accord with those authors who condemn gastrostomy as the sole treatment for non-resectable carcinoma of the esophagus. Wu and Louck[22] found that gastrostomy reduced survival times of their patients to 2.2 months following hospital discharge. Cooper and Buxton[23] in reviewing 109 cases in which gastrostomy was done for palliation of esophageal carcinoma noted a 50% mortality within one month of surgery. Both of these series point up the fallacy of gastostomy as a definitive therapeutic measure in this situation. Our technique employs a gastrostomy, but only as a means to an end, the end being the insertion and fixation of a Mackler tube, with reestablishment of esophageal continuity. The gastrostomy is in no way meant to provide palliation of itself.

We have not as yet had the opportunity to employ the presently described technique to any cases of non-resectable epidermoid carcinoma of the esophagus. In dealing with such a lesion it is our plan to create a gastrostomy at the time of exploratory thoracotomy. The gastrostomy can be used for feeding as necessary during the period in which the lesion is being irradiated. When the reaction and edema incident to the roentgen therapy subside, peroral alimentation may be reinstituted. The gastrostomy can be employed again to good advantage in the placement and fixation of a Mackler tube if the patient fails to derive benefit from the irradiation, or at such time as no further roentgen therapy can be given.

Summary

The extent of the problem posed by non-resectable adenocarcinoma of the esophageal cardia has been reviewed. Several different methods of palliative intubation of the esophagus have been outlined, and a new technique for the placement and fixation of a Mackler tube has been described and illustrated. Three cases have been detailed in which this method has been used to good effect in patients with non-resectable lesions of this nature.

Conclusions

1) Adenocarcinoma of the cardia accounts for approximately 45% of all esophageal carcinomas.
2) In 50 to 75% of these cases the lesion is either inoperable or is non-resectable at the time of surgery.
3) The method described herein for the introduction and fixation of a Mackler tube through the carcinoma has worked well in our hands and has resulted in effective palliation being given to three patients with non-resectable adenocarcinoma of the cardia.

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TRAUMATIC RUPTURE of the Diaphragm

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ALL OF US are called upon from time to time to treat, immediately after injury, the severely injured patient who presents many acute, life endangering problems. When seeing that patient for the first time, we are immediately faced with the problem of making a differential diagnosis which must run the gamut of the entire field of traumatic surgery. Unfortunately, these severe accidents and resultant severe injuries do not always occur when our diagnostic acumen is at its best, and therefore, certain entities which are relatively uncommon may be unlooked. One of these less common problems is that of traumatic rupture of the diaphragm. Many writers feel that traumatic rupture of the diaphragm is on the increase and lay the blame to the increase in incidence of automobile accidents. Certainly the incidence of multiple injuries to one individual is increasing following automobile accidents and it is in these people in which traumatic rupture of the diaphragm occurs most frequently. However, this increase in incidence may be more apparent than real for Grage and MacLean[1] report only 16 patients treated at the Ancker Hospital in St. Paul during an 18-year period. Bernatz, Burnside, and Clagget[2] reported 112 from the Mayo Clinic, 78 as a result of automobile accidents. Since 1952, we have admitted to Winona General Hospital an average of 5 patients per month as a result of automobile accidents. In these approximately 480 patients admitted during this eight-year period, only 1 case of traumatic rupture of the diaphragm has occurred. This, of course, is rare enough to stimulate considerable interest in our own community and serves to point out the fact that this entity can be treated in the smaller community if trained personnel are available.

Henry I. Bowditch[1] first published his description of this problem in 1853, and is generally credited with being the first person in this country to make an ante-mortem diagnosis of ruptured diaphragm. He outlined five clinical signs which he felt were important in making the diagnosis. These signs are still extremely useful and are as follows: 1) Prominence and immobility of the left thorax; 2) Changed position of the heart with displacement to the right; 3) Absent breath sounds in the left chest; 4) Abnormal gurgling bowel sounds in the left chest; 5) Tympany over the lower left chest on percussion.

From an etiological point of view, rupture of the diaphragm may be classified into three groups:

1) Indirect injury
    a) Any sudden increase in intra-abdominal pressure will cause the abdominal viscera to be forced against the inmovable boney pelvis and also against the relatively weak structures of the diaphragmatic leaves. The diaphragm being supported superiorly by only the thoracic structures gives way as a result of this increased pressure on the part of the abdominal viscera resulting from either a blow to the abdomen or the thorax. The right leaf of the diaphragm being supported by the liver is less prone to rupture than the left.
    b) Injury to the thoracic cage in a lateral direction has been suggested by DesForges[3] as a cause of rupture of the diaphragm. He believes that the lateral pressure on the thoracic cage will cause the diaphragm to tear in a lateral direction.
2) Direct injury due to a stab wound or a bullet wound.
3) Inflamatory necrosis of the diaphragm due to a subphrenic abscess.

The symptomatology of a ruptured diaphragm can be divided into three phases. 1) The immediate symptoms are those of severe trauma and include shock, dyspnea, cyanosis, tachycardia, diminished chest expansion, impairment of resonance, strange chest sounds, cardiac displacement, changes in percussion and auscultation of the chest, abdominal pain and tenderness, and rigidity of the abdominal wall. Signs of intestinal obstruction or rupture of the spleen may also be present. These, of course, may be combined with evidence of other severe injuries. 2) The interval phase. Bernatz has suggested one group of patients in which no symptoms occur immediately following diaphragmatic rupture, and these patients go on to an interval phase, wherein there are vague gastrointestinal or respiratory symptoms which are usually not severe and tend to suggest gall bladder, coronary, or peptic ulcer disease and even to simulate an incomplete intestinal obstruction. Many of these symptoms are of such a varied nature that they appear to be functional. 3) Obstruction of an incarcerated organ. The symptoms will depend upon the organ which has become obstructed and/or strangulated. The severity and degree of symptoms will be directly proportionate to the altered physiology of the bowel obstruction, vascular engorgement, pulmonary ventilation and cardiac distress. This phase may be early or late. Strangulation of the herniated bowel occurring early in the period immediately after rupture will compound the problem of treating an acutely injured patient.

The diagnosis can be made from the history, physical examination, and X-ray findings. The X-ray diagnosis can be made from a plain roentgenogram of the chest either with or without gastric suction tube in place, fluoroscopy, or if necessary, the use of a contrast medium to demonstrate displacement of the stomach into the thoracic cavity. The X-ray diagnosis is based upon: 1) Evidence of an air bubble above the normal level of the gastric bubble. 2) Fluid in the chest. 3) Cardiac and mediastinal shift to the right which is almost always present. One of the more common errors in interpretation of chest X-rays is that of interpreting the herniated stomach as a high diaphragm. I regret to say, we fell into that trap ourselves and I think the slides will illustrate this problem a little later. The greatest aid to the diagnosis of traumatic rupture of the diaphragm is the physicians awareness of the entity and a high degree of suspicion when he interprets the physical and X-ray findings. However, it must be remembered that traumatic rupture of the diaphragm does occur in patients with multiple injuries and it is in this type of patient that diagnostic signs and symptoms are often masked by others which seem to be relatively more important.

Treatment of traumatic rupture of the diaphragm is replacement of the herniated viscera into the peritoneal cavity and surgical repair of the diaphragm. Most writers[4, 5, 6] are of the opinion that repair is best accomplished through a thoracic approach, although others feel that a combined thoraco-abdominal approach may be used. The abdominal approach is also accepted when the abdominal viscera need examination, and this incision can then be extended into the combined thoraco-abdominal incision if the situation warrants. The optimum time for surgical intervention depends entirely upon the condition of the patient and it is the feeling of all writers, including your author, that repair should be carried out as soon as the condition of the patient will permit. Grage has pointed out that it is in these seriously ill patients that one is often wrongly dissuaded from surgery. However, replacement of both thoracic and abdominal viscera into their proper cavities can only be accomplished by operative intervention and the condition of the patient improves remarkably after this has been carried out. As has been pointed out earlier, the danger of obstruction and strangulation of the bowel or stomach is very real and if the viscera are allowed to remain herniated for a period of time, one runs an increasing risk in so far as the incidence of obstruction and strangulation is concerned.

With these brief remarks, I would like to present one case of traumatic rupture of the diaphragm which occurred following an automobile accident on the outskirts of Winona. This patient was a 30-year old Lutheran minister who was the driver of an automobile which was hit head-on by an oncoming car. He was admitted to Winona General Hospital immediately following the accident and upon admission complained of severe pain in the upper abdomen, shortness of breath, and pain in the left chest. Examination on admission revealed a well-developed, well-nourished young man who was obviously in shock and in considerable distress. His repirations were rapid and painful. Both sides of the chest were resonant to percussion and breath sounds could be heard on both sides of the chest. In addition, numerous grating sounds could be heard over the entire left chest with each respiration. The upper abdomen was extremely tender and there was considerable voluntary guarding of the abdominal muscles. No bowel sounds could be heard. Examination of the extremities revealed lacerations of both knees and a long, deep laceration across the mid-portion of the left biceps muscle. There was a laceration of the forehead 6 centimeters in length. X-ray examination of the chest on admission revealed multiple rib fractures on the left involving the third through the seventh ribs at approximately the mid-axillary line. There were evidence of hemothorax and most likely a tension pneumothorax. The patient had been admitted to the hospital at approximately midnight on September 27, and he was put to bed and given general supportive care. At 4:00 A. M. he developed extreme difficulty in breathing, his pulse became rapid and his blood pressure, which had been stabilizing, suddenly dropped. Examination revealed marked displacement of the mediastinum to the right and dullness to percussion over the entire left side. Closed thoracic drainage was accomplished and the catheter connected to suction. His condition improved immediately following this. Because of continued nausea and vomiting, gastric suction was started and X-ray examination revealed the gastric tube to be within the stomach, but present in the thoracic cavity. Further serial X-ray examinations of the chest were made which confirmed our suspicions of a rupture of the left diaphragm. By evening of September 30, his condition improved to the point where we felt that he could safely withstand the necessary surgery. This patient was operated upon by Dr. Lyle Tongen, who approached the hernia through an abdominal incision. Upon entering the abdomen, a large rent extending across the entire left diaphragm was found. Through this laceration were herniated the stomach, colon and spleen. These were replaced into the peritoneal cavity and further examination revealed a tear on the lateral surface of the spleen and for this reason splenectomy was carried out. The diaphragm was sutured with interrupted mattress sutures of 00 silk. Two catheters were placed within the thorax before the diaphragm was closed and brought to the outside by means of a stab wound. After closure of the diaphragm and expansion of the left lung, suction was applied to the catheters. The patient made an uneventful recovery following his surgery and was discharged from the hospital on October 16, 1959.

Conclusion

Although rupture of the diaphragm is said to be seen with increasing frequency, we have seen only one in our community in the last eight years. This is reported along with a brief discussion of the symptoms and physical findings and treatment of traumatic rupture of the diaphragm. Early diagnosis is, in my opinion, the key to a successful treatment of this condition and depends in great measure upon the degree of suspicion on the part of the attending physician. The morbidity and mortality is proportionate to the length of time before treatment is instituted.

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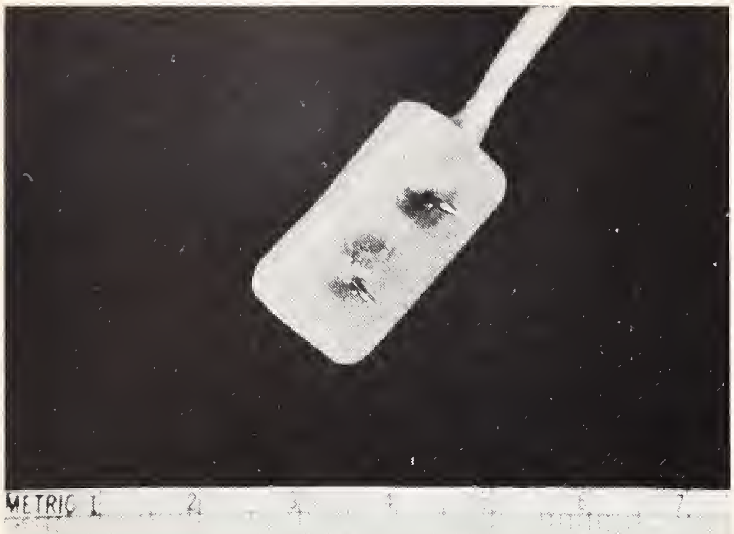

Figure 1. Stainless steel electrodes imbedded in silastic silicone rubber.

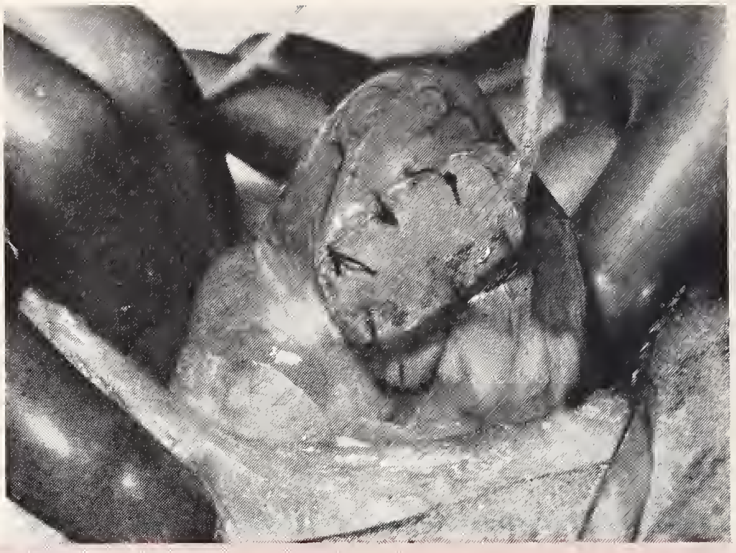

Figure 2. Bipolar electrode attached to the ventricle of a dog heart. 6 silk stitches are used to attach the silastic silicone platform.

The Clinical Use OF A PERMANENTLY IMPLANTED

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NORMAN A. ROTH, M.D.
KAREL ABSOLON, M.D.
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WITH THE exception of the congenital variety, complete heart block requires either medical or surgical therapy. Medical therapy consists largely of Isuprel®, Banthine®, Probanthine®, or ephedrine. Many other medical measures have been attempted. Surgical management consists largely of implanting a myocardial electrode as first described by Weirich and his colleagues[1] for the treatment of heart block encountered during or following intracardiac surgery.

The naturally acquired types of complete heart block may be grouped into two large categories, namely, that type produced by infarction in or around the conducting system of the heart, and that produced by infection. The congenital type of heart block requires no therapy, but does require a thorough examination to ferret out the associated intracardiac defects found in approximately 25 percent of cases.

Heart block appearing during open heart surgery may be treated by removing the offending stitch near or around the Bundle of His, or, if that is not effective, an electrode is stitched to the heart for artificial stimulation for a variable length of time until the heart resumes

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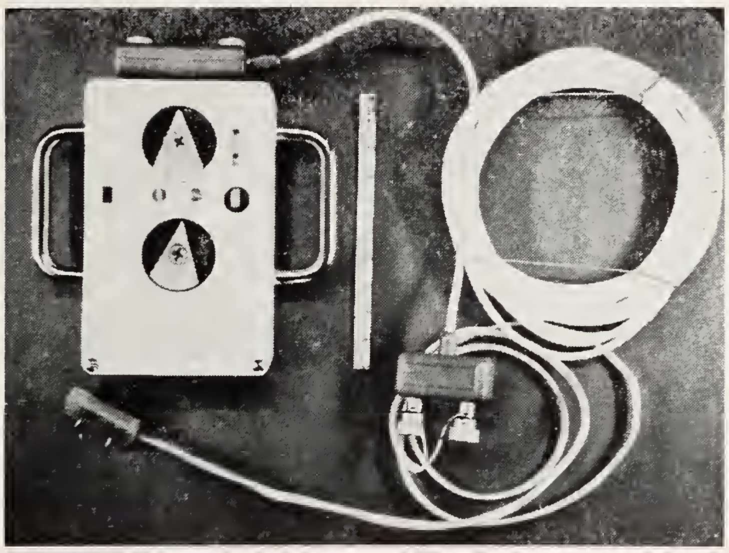

Figure 3. Composite picture of the pacemaker, the conductery cables, and the bipolar electrode.

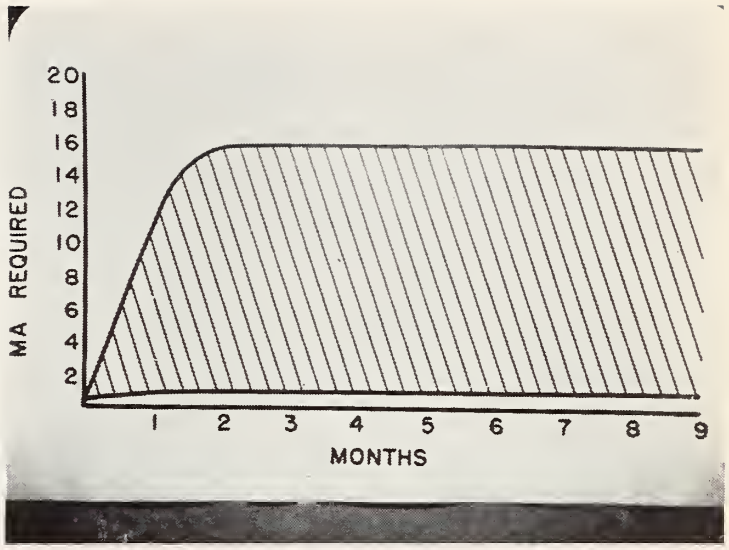

Figure 4. Graph showing variance in driving threstholds in dogs over a 9 month period. The human cases have fallen into the same range.

BIPOLAR MYOCARDIAL ELECTRODE for Complete Heart Block

normal sinus rhythm. Fortunately most surgically blocked hearts recover in one or two weeks.

A study has been carried out in the laboratory to determine the feasibility of using a bipolar type of myocardial electrode for prolonged stimulation of the myocardium. Pilot studies were attempted on the totally blocked dog heart; but due to the difficulty of permanently attaching the pacemaker to the dog, this approach was abandoned. Overdriving of the unblocked dog heart at weekly intervals has been used for the prolonged studies.

Method

Two stainless steel electrodes 1.5 cm apart are imbedded in a silastic silicone rubber mold 1.5 by 2.5 cm (fig. 1). Two stainless steel teflon-coated wires conduct the current to the electrodes; the wires are encased in an extension of the silastic silicone rubber from the mold thereby producing a water-tight mechanism. Dogs weighing 20 to 30 lbs. are anesthetized with 2.5 percent Pentothal®. Controlled intratracheal respiration permits left thoracotomy. The silastic silicone patch with the bipolar electrode is stitched to the epicardium of the left ventricle (fig. 2) and the lead is brought out to the external chest wall through a small stab wound where it it attached to the terminals of the Medtronic transistor pacemaker (fig. 3). Representative graphs of the amperage required to drive the hearts of dogs are shown in figure 4. Apparently the resistance across the electrodes is not significantly changed by whether or not the dog's heart is blocked as the values found

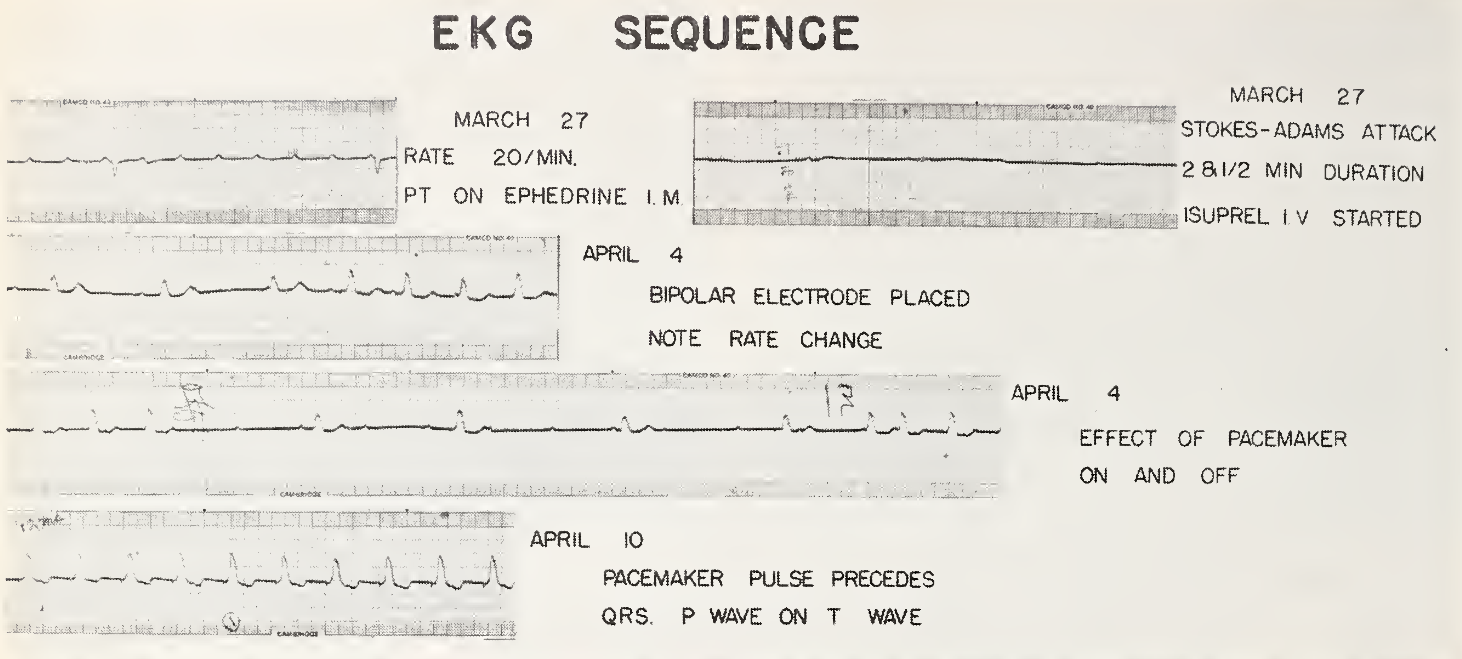

Figure 5. Electrocardiographs of the first human patient placed on the bipolar electrode.

in the animal work coincide with the values subsequently found in the totally blocked human heart. The unblocked dog heart can be overdriven by the conventional pacemaker using the bipolar technic for as long as 9 to 10 months with stimulation level falls between 1 and 14 milliamperes (fig. 4).

Discussion

Substantial evidence indicates that myocardial infarction complicated by atrio-ventricular block produces a greater morbidity and mortality.[2] Mintz and Katz[3] found 100 percent mortality when complete heart block complicated myocardial infarction. It is conceivable that a bipolar myocardial electrode could be attached directly to the myocardium of a patient who has suffered a myocardial infarction and total heart block. Naturally, all methods short of surgical intervention would have been attempted first. The operation requires very little time. The anesthetic plane need not be deep and muscle relaxation need not be prolonged beyond that required for tracheal intubation. The aversion to foreign bodies of any kind of the heart has been negated somewhat by the commonplace use of Ivalon patches to repair cardiac defects. In the permanently blocked heart following heart surgery, this technic offers a method of obtaining prolonged artificial stimulation.

It is conceivable that one can extrapolate from the present findings and predict that the bipolar method will permit stimulation of the heart for many months to years. Several animals did not fall within the predicted stimulation levels — all of these were found at autopsy to have severe infection in and around the silastic rubber bipolar electrode.

Clinical Application

W. M. is a 72-year-old man who was admitted to Bethesda Hospital with a bleeding duodenal ulcer. Three days after admission, he developed a myocardial infarction complicated by complete heart block. The ventricular rate varied between 16 and 36 per minute. The patient sustained one Stokes-Adams attack which persisted for two and one-half minutes (fig. 5). Three days after the onset of the complete heart block, the patient suffered recurring convulsions — in one 24-hour period he had 40 recorded convulsive spells. Medical therapy consisted of ephedrine, intramuscularly; Isuprel®, intramuscularly and intravenously; and Levophed®, intravenously. Despite medical supportive therapy, the patient's condition was deteriorating rapidly so that implantation of the bipolar electrode was attempted. Fourteen days after onset of the infarction, on April 4, 1959, the patient was carefully moved to the operating room and a bipolar myocardial electrode was stitched to the right ventricle. The patient was placed in the supine position for surgery; general anesthesia was used with particular attention to adequate respiratory exchange via an intratracheal tube. The patient withstood the procedure well. The pacemaker immediately picked up the heart to 80 beats per minute; the blood pressure stabilized at 110/70.

The patient has now worn his artificial pacemaker on his vest for 10 months. His most recent electrocardiographs (fig. 6) show that his heart can be driven with as little as 5 milliamperes, but for safety's sake the amperage is set at double that figure. The resistance between the two electrodes appears to have leveled at 800-900 ohms. The patient's blood pressure remains at 110-120/80-90. Although the patient suffered left leg paralysis immediately after the surgical implantation procedure, there has been sufficient improvement so that he can be up and about.

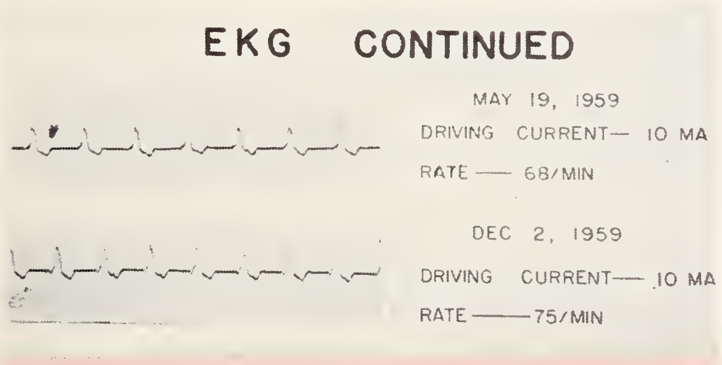

Figure 6. Electrocardiographs taken 10 months after implantation of electrode. At this date, the patient remains totally dependent on the pacemaker.

A group in Phoenix, Arizona, has implanted the bipolar electrode in two patients under local and regional block-taking care not to enter the pleural space.[4] Perhaps this method could be adopted. However, it would seem that the absolute control of aeration offered by intratracheal intubation plus the ready exposure far outweighs the hazards of general anesthesia.

Conclusion

A bipolar myocardial electrode of stainless steel has been studied on the hearts of healthy mongrel dogs for over one year. A clinical application of the technic in a 72-year-old man is presented. The patient's heart has been artificially driven for over ten months. Studies to date on the animals and the human patient indicate that this method of driving the blocked heart is useful for the intractable case of complete heart block.

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The patient presented has now worn the artificial pacemaker 20 months. His heart remains totally dependent on the artificial stimulation.

COFFEY - COOPER

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Gasserian Compression for Trigeminal Neuralgia

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THE STANDARD TYPE of surgical treatment for trigeminal neuralgia has been for many years partial or complete section of the trigeminal nerve, either at or proximal to the gasserian ganglion. This procedure effectively stopped the paroxysms of excruciating pain, but also left the patient with a totally anesthetic face and mouth in the area corresponding to the portion of the nerve sectioned. All neurosurgeons are well aware of the troublesome and sometimes severe post-operative paresthesias in the anesthetic area developed by many of these patients and various types of difficulties with the anesthetic eye. In 1952, Taarnhoj[2] reported success in controlling the pain of trigeminal neuralgia by decompressing the posterior root of the trigeminal nerve at the point where it crossed the petrous ridge as it passed from the posterior to the middle fossa. This procedure consisted essentially of incising the dura mater and its contained superior petrosal sinus as it passed over the nerve at the petrous ridge. The nerve was thus freed of any pressure exerted upon it at this point. The great advantage of this operation was that it preserved sensation to the face. However, follow-up reports have shown an unduly large recurrence rate of the severe pains. Svien and Love (1959)[3] reported the results on 91 patients on whom posterior root and gasserian ganglion decompression was carried out, after a follow-up period of 4 years or more. Approximately 76 per cent had reported recurrence. Pudenz and Sheldon (1952)[4] reported relief of pain in a high percentage of cases by decompression of the second and third divisions of the trigeminal nerve at the foramina rotundum and ovale. "Gangliolysis" was described in 1954 by Stender.[5] In this procedure, all tissue was removed from over the surface of the gasserian ganglion with a wide opening of Meckel's cave. He obtained relief in 18 cases over a period of 13 months with intact facial sensation. Actual "compression" instead of "decompression" was reported by Sheldon, Pudenz, Freshwater, and Crue (1955).[6] These authors concluded that the common factor in the decompressive procedures at the petrosal ridge and foramina of exit of the trigeminal nerve was operative trauma. This compression operation consisted of deliberate trauma exerted upon the posterior root and adjacent ganglion by a blunt instrument. Excellent short term results were obtained without significant loss of facial sensation.[7] Sheldon (1958)[8] reported a recurrence rate requiring reoperation of 9 percent. Abbott (1958)[9] stated that of 64 patients who had had the compression operation one to five years previously, 3 per cent required reoperation. However, it is generally recognized that adequate long term follow-up studies are still lacking for the compression procedures and in spite of the favorable reports to date, trigeminal section or rhizotomy remains at this time, the generally accepted surgical procedure for trigeminal neuralgia.

Materials and Method

The compression operation was carried out on 63 patients during the period from February, 1956 to June, 1959.* Follow-up data were available on 58 of these cases. Four had expired. Surgery had been done at least one year previously in 80 percent of the cases, two years in

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* Approximately half of these cases were operated upon by Doctor Wallace P. Ritchie, St. Paul, Minnesota.

54 per cent, and three years in 34 per cent. The longest followup was for 41 months.

The age range of the 58 cases included in this study was 26 to 82 years. Most of the patients were in the older age group with 72 per cent of the cases occurring between 60 and 79 years of age. The right side of the face was the painful side in 63 per cent of the cases. Sixty-five per cent were females. In only one case was the pain bilateral. The pain of the opposite side had developed approximately 2 years following surgery and was not yet severe enough to warrant surgical therapy.

The operative procedure was carried out in all cases through the usual temporal extradural approach with the patient in the sitting position. The dura mater was elevated from the floor of the middle fossa with section of the middle meningeal artery after plugging the foramen spinosum with cotton. The usual exposure of the gasserian ganglion and its adjacent posterior root was obtained by stripping the dura mater from the dura propria of the ganglion and incising its coverings with a sharp knife. In no case was the dura cut over the posterior root at the petrous ridge in an attempt to decompress the nerve. A blunt instrument was used to mildly traumatize the entire ganglion and adjacent sensory root. No attempt was made to do a selective compression. The patients were ambulatory the next day and usually went home between the fourth and eighth post-operative day.

Results

Only one case in the entire series required reoperation because of recurrent paroxysmal pain. The pain in this case returned two months following surgery and subsequently the sensory root was sectioned in the usual manner. There was no suggestion of any type of recurrence of pain in 93 percent of the cases. However, the remaining cases had noted, on occasions, a sharp pain, somewhat like the former tic pain, but very much diminished and very transient. In no case did these individuals consider it significantly severe to even return to the office for a check-up. This type of pain apparently had not progressed with the passage of time.

A significant diminution of trigeminal sensation was present in 78 percent of the cases. This was present subjectively and objectively. However, even in these cases, sensations of light touch and pin prick were present though diminished in the entire distribution of the nerve, usually most marked in the maxillary division. In the remaining cases, sensation was only mildly diminished although subjectively, the patients were aware of a definitely changed sensation. In two of these, objective testing revealed very slight, if any change. The corneal reflex was present in most cases tested although in three in which the sensory deficit was more marked, the reflex could not be obtained. In practically every case, the sensory deficit was most marked immediately following surgery with a gradual subjective and objective improvement over the period of the next two to four months. However, after four months, it appeared that there was very little objective improvement.

Eye complaints following the compression procedure have been minimal. In only one case did a corneal ulcer develop. Some patients stated that on occasions they noticed a scratchy or itchy feeling in the eye. Others mentioned that there was more watering or dryness than prior to surgery. There were no complaints of diplopia at any time.

Post-operative facial paralysis did not occur in any case of this series. In two patients, a suggestive droop of the corner of the mouth was noticed.

Four patients noted a persistent feeling of fullness with slightly diminished hearing in the ear on the side of surgery. This complaint, although occasionally present immediately following surgery, was almost always transient, apparently due to presence of blood or cerebrospinal fluid behind the eardrum from seepage through small defects in the roof of the tympanic cavity or through opened air cells of the temporal bone. No specific therapy was required.

Post-operative paresthesias of any type were absent in 88 percent of the cases. In the remaining cases mild feelings of burning, stinging, crawling, or drawing were occasionally present. However, in only one case was this sufficiently severe to require the patient to return or even report to the office for treatment. The paresthesias in this case have been present for three years, although diminished, and intermittently have required medication.

Herpetic lesions commonly appeared about the lips and occasionally the chin following surgery. These usually were apparent on about the second day and persisted 6 to 14 days. Although somewhat annoying to the patient, the only treatment needed was soothing ointment or lotion to the vesicles. No scars resulted. Some patients noted a chronic aching in the region of this eruption, although residual pain after healing did not occur. Similar lesions after rhizotomy are not painful since sensation is absent. According to Carton,[10] these eruptions are due to the herpes simplex virus and may occur in any patient who had previously had such an eruption during his lifetime.

There were no operative deaths and only one significant post-operative complication. This consisted of a partial basilar artery occlusion which occurred two hours following surgery.

Discussion

The diagnosis of trigeminal neuralgia can usually be established with ease particularly if the patient has an attack during the examination. The paroxysms of excruciating, sharp, shooting pain, confined to the distribution of one or more branches of the trigeminal nerve, cause the patient to cease all activity or at times to hold or even rub his face. The pain in most cases is of short duration, lasting from a few seconds to one or two minutes. In long-standing cases, there is a tendency for an attack to last longer, rarely up to 15 minutes or more. Typically, the onset and relief of the pain is sudden with no pain between attacks. However, in far advanced cases or in cases treated medically, particularly with dilantin or Vitamin B12, a dull, chronic aching may be present between the acute pains. This is particularly true of the ophthalmic division. Characteristic trigger zones are usually present. These are most commonly located in the areas where the terminal endings of the trigeminal nerve are especially numerous, about the lower or upper lips, alae nasi, or eyebrow, although they may also be present in the forehead, cheek, or gums. Exacerbations and remissions of the pain are characteristic of this disorder. The latter usually last from a few weeks to several months, although on rare occasions, pain may not recur for several years. However, the condition progressively worsens with more severe and frequent attacks almost inevitable.

Neurological examination in trigeminal neuralgia shows no specific abnormality. In fact, if any change is found in the trigeminal or adjacent nerves, such as sensory or motor deficit, reduced or absent corneal reflex, facial weakness, or extraocular disturbance, the diagnosis becomes doubtful, and search must be made for mass lesions in the region of the gasserian ganglion or in the cerebello-pontine area since such lesions are well known to be able to precipitate paroxysmal types of trigeminal pain.[11]

Alcoholic injections of the various divisions of the trigeminal nerve have been employed for many years to cause a temporary remission. As has been often stated, such injections are an ordeal not only for the patient but also for the surgeon. The use of this temporary, painful, and somewhat dangerous procedure is gradually disappearing. Injections of the gasserian ganglion with alcohol[12] or hot water[13] can be accomplished by inserting the needle through the foramen ovale in an attempt to carry out a more lasting remission of the trigeminal pains by permanently destroying cells of the gasserian ganglion. Although satisfactory results have been accomplished, the procedure is not in general use because of the obvious inherent dangers.

The etiology of trigeminal neuralgia remains unknown. Many theories have been postulated, some supported by morphological changes described in the trigeminal nerve, gasserian ganglion, or the trigeminal pathways of the brain. However, no pathological lesion has been established as the underlying cause.[14] This subject has recently been well reviewed by List and Williams.[15] These authors concluded that the mechanism for the syndrome lay in the descending trigeminal root system of the brain stem, presumably near or in the descending root of the fifth cranial nerve and its adjacent nucleus. Recent neurophysiological investigation[16] also lends support to this mechanism. It is probable that it is more of a physiological rather than morphological entity consisting of a focal pathological state involving multineuronal reflexes. It would appear that this overexcitable focus requires a critical threshold to be reached by sensory impulses along afferent pathways of that portion of the trigeminal nerve conducting to this focus so that sudden pain discharge to the cortex is accomplished. On the other hand anything that cuts down this afferent inflow would prevent the abnormal discharge. Gasserian compression, by partial destruction of the nerve, decreases sensory conduction to the trigeminal structures of the brain stem thus effectively preventing the discharge threshold from being reached. Presumably, recurrent cases of trigeminal neuralgia following the procedure would be related to the recovery of injured neurons of the trigeminal nerve or to insufficient destruction of the nerve originally. With this in mind, the cases reported in this paper were diffusely traumatized sufficiently to cause a definite objective sensory loss in most patients. Since only by surgical experience is it possible to gain some idea as to the degree of trauma necessary to produce the best results, the amount of sensory loss varied in many patients. Undoubtedly, the sensory loss in some patients was much greater than that needed for the control of the pain.

Conclusions

From the data available at the present time, it would appear that the compression operation must seriously be considered to be the procedure of choice for the surgical treatment of trigeminal neuralgia. The unpleasant after effects of the standard trigeminal rhizotomy are greatly reduced or avoided. The preservation of some degree of sensation is of course the most significant factor. In addition, however, other problems such as post-operative paresthesias and eye difficulties are markedly diminished. The relatively high recurrence rate with the decompressive procedure has not been found in the compression cases. In fact, it would appear that if sufficient diffuse trauma is produced to the sensory root or gasserian ganglion so that definite objective sensory impairment is present, recurrences would be relatively rare. Even so, if the tic pain would occur, a standard rhizotomy could be carried out with ease.

Bilateral trigeminal neuralgia occurs in approximately four percent of all cases.[1] The compression operation is particularly well suited for such patients. The motor nerve to the muscles of mastication are not only left intact, but sensation is preserved in the mouth.

Because of the very low morbidity and mortality, and minimized side effects associated with the compression procedure, surgery can be advised for the trigeminal neuralgia patient much sooner in the course of the disease than has been the practice in the past. He no longer needs to wait for the next dreaded pain or exacerbation to become so excruciating that surgery is finally advised or requested.

It is admitted that the apparent good results of the compression procedure can still not be accepted as conclusive. The follow-up time is too short, the first definitive traumatization being done in 1953.[6] It may be that the occasional case that has a slight twinge of tic-like pain, may some day require re-operation. However, the fact that the cases of this type found in this series have not required treatment or have not worsened with passage of time is encouraging.

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A Traumatic Syndrome —

recognition and treatment

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THE ACUTE reaction of soldiers to combat experience has received considerable attention. By the time of the Korean War, the United States Army Medical Corps was fully alerted to the need for immediate and if need be vigorous treatment of psychological casualties.[1] The purpose of this article is to call attention to a psychological syndrome ensuing upon life-threatening experience, not necessarily relating to the dangers of war, that likewise deserves prompt recognition and treatment. Early intervention in such cases may avert chronicity of symptoms and the development of treatment resistant secondary neurotic elaborations.

Following a frightening experience or series of experiences in which an organism is physically threatened or actually injured, the organism becomes anxious if placed once again in the same or similar circumstance. The person who is thrown from a horse, once or several times, at the very least may lose any relish he might have had for riding, and will more likely become acutely disturbed at the prospect of mounting a horse again. This is a normal reaction. The proverbial cure is to urge the subject back into the same situation as soon as feasible and give him the opportunity to regain his sense of mastery of the situation and dispel his fears before they become fixed and immutable.

Some individuals, however, following a life-threatening experience will show a more comprehensive and disorganizing response. Conceivably, this might arise from some personality predisposition or the severity and possible repetition of the provoking event. The psychopathology is expressed in a syndrome described as follows:

1. Persistent and unrelieved feelings of danger and tension.
2. Fear to perform in situations previously thought innocuous.
3. Persistent, and frequently bizarre, physical complaints.
4. Startle reaction.
5. Overconcern for anyone thought to be in danger.
6. Nightmares.

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These, or like symptoms, indicate one of the psychic disorders that beg prompt intervention. A typical case and its successful treatment is presented, followed by a discussion of the disturbed psychodynamics of this disorder.

Case Presentation

History: M. J., a 19 year-old single woman in the United States Air Force, was seen at a hospital Neuropsychiatric O.P.D. ten days following an automobile accident. Referral had been made from her unit dispensary due to complaints of headache and chronic fatigue.

The accident occurred when the driver of the car in which she rode grew reckless despite her protests, and in passing another car there was a head-on collision. The patient recalled being frightened by the approaching vehicle; but next remembered standing outside the badly wrecked car in which she had been. She had received a blow on the top of the head, but there was no other injury. The car had rolled over three times. She recalled nothing of this.

Since the accident the patient had, "not felt myself." Not only did she feel tense, irritable and persistently tired, but she now found her job assignments difficult and unpleasant. She resented taking orders, and was easily angered. If she observed anyone in danger of even minor injury, she herself suffered a severe fright. Previously unnoticed noises startled or annoyed her, and the earphones she wore at work felt unduly tight. A peculiar and ill-defined pain and "heaviness" in the back of the head and neck made her distraught. There were momentary spells in which, "my whole body felt numb and I could not hear anything." She felt, "too exhausted to do anything but work, eat, and sleep." There had been several nightmares in which she was chased by poorly defined figures. Also there were dreams of automobile wrecks she could not clearly recall. There was no recollection of similar dreams in the past.

Past history was free of significant illness. The patient had struck her right temple in a fall in basic training four months earlier; and there had been a "heaviness" in the back of the head, which had grown less severe, but had persisted on occasion until the present illness.

Developmental history was not remarkable. The patient was raised in a rural community in the south. She spoke of her parents as strict, but did not resent obeying them because she felt they were kind and just. At high-school the patient did average work, was well liked and socialized easily. Soon after graduation she enlisted in the Air Force. Her adjustment was good, and she had found the Service, and in particular her assignments, interesting and enjoyable.

Examination: Examination showed a well-developed, neat, attractive young woman who walked slowly and appeared apprehensive, tired, and sullen. The sensorium was clear, orientation was correct, and the intelligence was estimated as average. Although she showed little spontaneity, there was no unusual or bizarre ideation. There was a preoccupation with the complaint, and pessimism since with time her symptoms seemed if anything more severe. But for a point of tenderness at the vertex of the head, physical and complete neurological examinations were within normal limits. There was no swelling or contusion of the scalp and skull films the day after the accident were not remarkable.

Treatment: At the end of the first session, the patient was told that there was no indication that she had suffered significant bodily injury, but that reviving memories of the accident and understanding more of what had happened to her could be of benefit. Mention was made that dreams might give leads as to the source of her disturbance.

There were several sessions over a three week period. In the second she reported the symptoms persisted. She could not relax and there was a growing sense of exhaustion. Of note was that one night prior to falling asleep, for a few moments she felt completely paralyzed. The suggestion was made that the feeling of paralysis might have been similar to something she suffered in the accident.

The third session the patient spoke of increasing difficulty. She thought people took her symptoms lightly; believed orders given her by superiors unreasonable and her duties more exacting than those assigned others. She refused any relief from duty, however; firstly because she felt needed in her assignment, and secondly because she felt this could only make it more unpleasant for herself in relation to her superiors.

The following session a dream was reported in which the patient was caught in the small corner of the ceiling of a room and could not move. She awakened in terror. It was asked if this was like the sensation of paralysis when falling asleep, and if the dream could somehow be related to the accident. There was a quick reply that yes, she just now could remember in the accident being thrown into the back seat and onto the floor. She now remembered having a fear that the car would catch on fire and a sense of panic because she had been wedged into a small space and could not free herself. It was only after some time, she recalled, that with difficulty the driver and others extricated her from the wreck. It was then suggested to her that, in a way, she was still living in a state of panic but perhaps now she had a better idea of what it was about.

When next seen the patient reported she felt better. She had ventured to go roller-skating the evening before. Skating, however, she had been terribly frightened of falling. This had never been true before. It then became clear to her, she said, that since the accident it was not her headaches and numb sensations alone that were responsible for her "not feeling herself." Later in the evening she had thought of the accident. She recalled the car swerving off the road and as it rolled over, hitting her head; as well as the panic at being trapped. It was suggested that as long as she had forgotten what in particular had frightened her so terribly almost any situation meant danger to her, and what she really still feared was destruction in an automobile accident! She was assured that of course she would be uneasy in a car for some time, but otherwise she was really able to do things as before.

The patient did not appear at the next session. She sent word that she had been cured and did not need the doctor further. She was presented to a hospital conference three weeks later. She was smiling and cheerful, and said she felt "her old self." There were no nightmares, no peculiar sensations, no irritability, and she was again enjoying her assignments. In one situation she admitted discomfort, and that was when driving and approaching and passing other vehicles on the road.

Discussion

Two phenomena are observed: (1) a symptom complex, (2) impairment of memory for the precipitating event. Appraisal of the physical status showed no structural embarrassment to explain the symptoms or the amnesia. A causal relationship between (1) and (2) is thus inferred: In the traumatic event the patient felt overwhelmingly threatened and helpless. No appropriate defense appeared possible. The only defense was, so to speak, a psychic flight; and escape was affected by a denial of cognition. But this was accomplished only at a price. In effect, the means for successful accommodation to the environment were overwhelmed and abandoned. Denial of danger did not annihilate fear, but the danger became ill-defined. Fear persisted, and a system of reverberating processes was initiated.

Firstly, there can be no effective accommodation to such an ill-defined and omnipotent fear. Secondly, the self-image of mastery of the physical world, essential to any effective accommodation to the outside world, is lost. One implements the other, and heightened fear continues to prevent the identification of the fear's original source. Consequently there persists an amorphous fear of the outside world and a helplessness before it.

There is no organized response. The symptoms express just this. Any uptoward stimulus is interpreted with alarm, as a threat to the patient's physical integrity. Hence the startle reaction, the prevailing tension, the fear to perform in previously innocuous situations, and the subsequent exhaustion. Danger to others is seen not only as a potential, but as an immediate danger to the self. The patient is perpetually on guard, and minor pains aggravated by tension are given credence and perceived as major threats. The spells may well be renewed attempts at escape from an intolerable situation. The dreams (and the sensations of paralysis in a twi-light-like state in falling asleep) are viewed as attempts to redefine and master the original danger, but terror intervenes.

The connection between symptoms and amnesia are so conceived. Thus treatment was directed towards one end: definition of the danger and diminution of the provoking fear. In the case under discussion, this was accomplished without resort to hypnosis or sodium amytal interview. In more refractory cases, particularly where the patient withdraws from work or other responsibilities, these could have value.

In cases where recovery is not prompt, untreated, or ineffectually treated, the reaction is seen to undergo further development. This is described at length by Kardiner in battle casualties.[2] Antecedent patterns of handling fears characteristic of the individual are later evoked. In effect, the syndrome is variously masked by a consolidated picture of psychic damage and neurotic repair. Such measures, originating and developed in response to social situations, however, cannot reinstate a sense of mastery of the physical environment or effectively subdue the prevailing fear and sense of helplessness. With chronicity the basic symptomatology once more erupts. Symptoms may then also secondarily acquire demonstrative value, symbolically or otherwise express dependency, and become vested interests commanding secondary gains.

Summary

A traumatic syndrome was described, an illustrative case presented, and concepts and treatment discussed.

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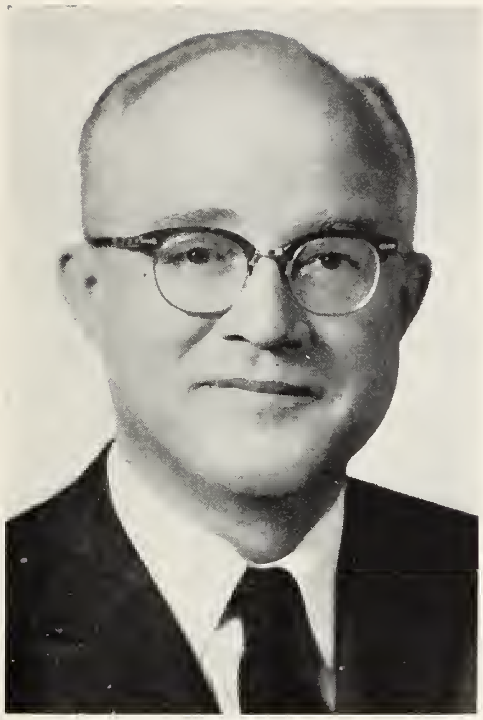

ARTHUR H. WELLS, M.D.

TO ARTHUR H. WELLS

An Appreciation

AT all-too-infrequent intervals there comes to societies or institutions a person who is different from the ordinary mold of mortals, one who possesses the keen foresight to see dust and cobwebs that are invisible to most people and who has the initiative and energy to sweep away these fusty elements. Such a person came to *Minnesota Medicine* in September, 1953, in the form of Dr. Arthur H. Wells, the well-known pathologist from Duluth. His presence as the new editor-in-chief provided the leavening influence that stirred up new ferments in the journal. Dr. Wells assumed this post after the resignation of Dr. Carl Drake, who had completed 34 years of unstinted contribution as editor of the journal.

Arthur Wells was born in Argentine, Kansas, on March 30, 1904. After attending the University of Kansas and the University of Pennsylvania, he received the M.D. degree from Harvard Medical School, in 1930. Following an internship at the Long Island Hospital, Brooklyn, New York, he was resident in Pathology at the Research Hospital, Kansas City, Missouri, from 1931 to 1934. In 1935, he was pathologist at Bethany Hospital, Kansas City, Kansas. He came to St. Luke's Hospital, Duluth, in 1936, as head of the Department of Pathology, a position he has held for 25 years.

A tremendous store of energy and the application of unfailing activity have typified the professional and personal life of Dr. Wells. In addition to his duties as editor-in-chief of *Minnesota Medicine,* he has held the following posts: president of the Minnesota Society of Clinical Pathologists; president of the Minnesota Division of the American Cancer Society (1944-1952); member of the Board of Directors of the American Cancer Society; member of the Board of Editors of the *American Journal of Clinical Pathology;* member of the Board of Registry for Medical Technologists under the auspices of the American Society of Clinical Pathologists (1946-1952): member of the Board for Approval of Schools for Medical Technology (1942-1952); chairman of the Cancer Committee of the Minnesota State Medical Association; chairman of the Committee on Hospitals and Medical Education of the Minnesota State Medical Association; member of the Board of Directors and also the Advisory Committee of the American Medical Writers' Association. He belongs to the St. Louis County Medical Society, the Minnesota State Medical Association, the American Medical Association, the Minnesota Surgical Society, the Minnesota Academy for Study of the Heart and Circulation, and the World Medical Association. He is a Fellow of both the American Society of Clinical Pathologists and the College of American Pathologists. For the past 2 years he has been chairman of the Committee on Nomenclature and Classification of Diseases sponsored by the College of American Pathologists and financed by a grant from the National Institutes of Health, U. S. Public Health Service.

A number of well-deserved honors have been conferred on Dr. Wells. These include the Minneapolis Star-Tribune Award for Leadership in Minnesota, September, 1951; a Gold Medal by the American Cancer Society in 1952, for contributing to the control of cancer; medals for the best scientific exhibit from the Minnesota State Medical Association in 1935, 1942, 1947 and 1950; and a medal for the best scientific exhibit from the American Society of Clinical Pathologists, in 1950. To culminate his work on *Minnesota Medicine,* this journal won the award for the greatest over-all improvement of any state medical journal at the 1959 meeting of the State Medical Journal Advertising Bureau sponsored by the American Medical Association. The journal also was cited as having the greatest increase in advertising of any of the state journals in the bureau.

Dr. Wells annually has presented material at two or more national, regional or state medical meetings for at least 10 years. His list of publications totals more than 150. His interest in cancer, evidenced by the previously mentioned Gold Medal, has stimulated growth of local cancer-detecting clinics throughout the state and has given substance to the slogan that "Every physician's office can be a cancer-detection center."

Dr. Wells married Ann Elizabeth Campbell on January 7, 1933, and they have a daughter, who is a college student. Many friends have enjoyed the warm hospitality of Ann and Arthur Wells in their beautifully situated home on the shore of Lake Superior. Here is seen a large swimming pool that was built almost entirely by Dr. Wells himself; this is just another bit of evidence testifying to the tremendous personal energy and drive of this restless man.

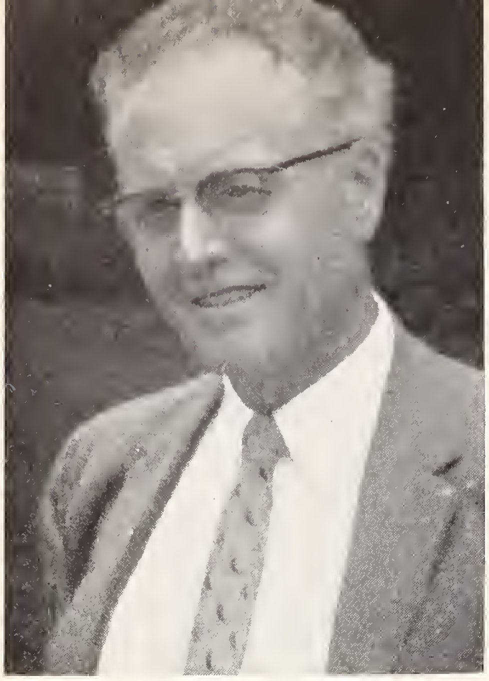
Probably the greatest contribution made by Dr. Wells to *Minnesota Medicine,* and through this journal to the Minnesota State Medical Association and medical practice in our state, was his ability to gather around him a Board of Editors who represented practically all facets of medicine in Minnesota. Previous to his era as editor-in-chief, the affairs of the journal had been conducted by a smaller Editing and Publishing Committee, whose main concern dealt with business and financial matters. The responsibility for procuring and editing the scientific articles fell largely on Dr. Drake alone. With the increasing complexity of medical sciences and the growth of such institutions as the University Medical School and the Mayo Clinic, it became more difficult for one man to keep his finger on the pulse of medical progress in the state. With the approval of the Council of the Minnesota State Medical Association, the first act of Dr. Wells was to appoint a 10-man working Board of Editors, including physicians from small towns, Duluth, Minneapolis, St. Paul, the University and the Mayo Clinic. Each editor had a separate sphere of responsibility and each was required to procure, evaluate and edit papers from every possible source. The work of this actively functioning group was evidenced almost immediately by a general increase in both the quantity and quality of the material in the journal. A number of new departments were instituted and modified from time to time according to reader interest and response, as determined by an extensive, professionally conducted reader survey made at the annual meeting of the Minnesota State Medical Association at Rochester in 1956.

Dr. Wells' primary forte as editor-in-chief was to act as a fomenting force, to know what men in the state could do a good job in a certain phase of the work, to promulgate ideas and spur the Board of Editors to bring these ideas to actuality, and to act as an energetic nucleus giving strength to the entire project. He was intensely desirous of furthering the efficacy of *Minnesota Medicine*. Associated with this intensity was a prodigious impatience with any delays or acts that could be construed as road blocks to his goal. He never has been particularly concerned with personal popularity, and this trait, combined with his desire for rapid progress and change, on occasions has led to ruffled feathers on the part of some of his associates. However, with recognition of the worth of his work, such feelings were not allowed to interfere with the progress of the journal. His philosophy for *Minnesota Medicine* is illuminated by a remark made by Dr. Harold Joffe, a former resident under Dr. Wells. The latter told Dr. Joffe early in his work: "Always admit your mistakes, learn from them and then go forward to do better work."

Dr. Wells has resigned as editor-in-chief of the journal primarily to devote more time to his afore-mentioned national project in developing a new nomenclature and classification of diseases for pathologists. The Board of Editors of *Minnesota Medicine* salute him because he has given unselfishly so much of his time and energy to further the practice of medicine without thought of personal health or financial return. The debt owed to him by medicine in Minnesota is large. The regrets of his Board of Editors at his leaving this post undoubtedly also are echoed by the Council of the Minnesota State Medical Association and all Minnesota physicians. We wish him well in his future work.

BOARD OF EDITORS
MINNESOTA MEDICINE

The Board of Editors extends great thanks to Dr. Harold Joffe, of Virginia, Minnesota, for furnishing much of the data included in this appreciation. Dr. Joffe was Dr. Wells' first resident and associate at Duluth. Without his help, this tribute would be incomplete.



DR. CARL O. RICE

DR. CARL O. RICE

New Editor-in-Chief

Doctor Carl O. Rice of Minneapolis is the new editor of *Minnesota Medicine.*

A surgeon in Minneapolis in practice since 1932, Dr. Rice was Chief of Staff of St. Barnabas Hospital, Minneapolis, president of the Minnesota Surgical Society, president of the Minneapolis Surgical Society, a fellow in the American College of Surgeons and a member of both the Hennepin County Medical Society and the Minnesota State Medical Association.

Dr. Rice has authored over 45 papers for various magazines. He has had two books published, *The Injection Treatment of Hernia* and the *Calculation of Industrial Disabilities of the Extremities.* In addition, he wrote Chapter 8 of *Bones, Joints and Ligaments in Courtroom Medicine,* published by C. Thomas in 1958.

Before beginning his surgical practice, Dr. Rice served as a general practitioner in Minneapolis from 1926 to 1929, when he took up his residency in surgery at the University of Minnesota. One year of this was spent at the Mayo Clinic and eight months as an exchange resident at the University of Berne, Switzerland, under Prof. deQuervaine. He earned his Master's Degree in 1932 and his Ph. D. in Surgery in 1933 from the University of Minnesota.

Dr. Rice spent his under-graduate days at the University of South Dakota where he was editor-in-chief of the collegiate *Coyote.* He took his post-graduate studies in medicine at the University of Minnesota, graduating in 1926.

Interest in research has shared a major part of Dr. Rice's attention over the years. He was instrumental in establishing in 1942 at St. Barnabas Hospital a program of clinical research and teaching. From the original laboratory in a bedroom of a surgical resident, the facilities at St. Barnabas have grown, dealing principally with the study of fluid and electrolyte problems. These studies led to aiding in the design of a number of the electrolyte solutions now on the market.

In 1931 Dr. Rice received honorable mention for his paper *Life Cycle of the Thyroid Gland* from the American Association for the Study of Goiter. He is listed in American Men of Science and Who's Who Among Physicians and Surgeons.

Dr. Rice lists as his hobbies oil painting . . . a blue ribbon winner at the Minnesota Medical Hobby and Art Show in 1957, skiing . . . having skied at many of the resorts in the Rocky Mountains, Austria and Switzerland, archery . . . as a member of the Minnesota Bow Hunters and Minneapolis Archers, having hunted deer and antelope with a bow, flower gardening, and has hunted deer with a rifle for 34 consecutive years.

Dr. Rice was appointed to succeed Dr. Arthur H. Wells by the Council of the Minnesota State Medical Association.

Editorials

New Editor-in-Chief

MINNESOTA MEDICINE is interested in the physicians of the North Central States whether or not they belong to the Minnesota State Medical Society. This is essentially the area served by Minnesota Medicine.

Physicians and surgeons of this region might be considered to be a reasonably homogeneous group, having in many respects a considerable number of mutual interests. Their patients are, in a large part, closely affiliated with our major industries, farms, ranches and a multitude of smaller industrial concerns. Prosperity in these businesses is reflected in the prosperity of the physicians.

In order to keep the pulse of these physicians, Minnesota Medicine is desirous of knowing the scientific as well as the economic thoughts of its reading physicians. Letters to The Editor will be welcome.

The Scientific Section of Minnesota Medicine shall endeavor to maintain manuscripts which will be of use and interest to the majority of its subscribers. Scientific writings will be encouraged and solicited from all its constituents. In order that these manuscripts will be of interest to a large percentage of its readers, Minnesota Medicine desires that submitted manuscripts be geared — up or down — to the level of the intelligent physician. Minnesota Medicine neither desires to compete with the highly specialized medical journals nor, conversely, does it desire to bow to the popular appeal of the throw away commercial journals. The Scientific Section of Minnesota Medicine will be under the guidance of Associate Editor, Dr. Claude Hitchcock.

Scientific abstracts will become a regularly published portion of Minnesota Medicine. It will be the policy for these abstracts to deal currently with the specialty fields of medicine, surgery, obstetrics, gynecology, pediatrics and neurology as they apply to our physicians who are in clinical practice. They will therein have an opportunity to evaluate a large field of scientific and clinical medicine without the need for culling through a large library of scientific journals. Associate Editor, Dr. David Norman, will conduct you through this abstract section.

"Progress in Medicine" will be under the literary hand of Associate Editor, Dr. Dennis Kane. This portion of the journal will endeavor to present from month to month a pertinent and clinical review of the newer developments in medicine and surgery as they become acceptable to you in your practice.

If you harbour editorial thoughts, Associate Editor, Dr. Stuart Arhelger will help you. If your esthetic sensibilities are aroused in reading the journal, seek a consultation with Associate Editor, Dr. Samuel Reichel. Last, but not least, if it is a mystery to you as to who pays the bills, Associate Editor, Dr. Frederick Owens, will let you in on his secret.

Each of these associate editors and his assistants, as listed under the Editorial Board, will endeavor to serve you in the future as they have done in the past. Your problems will become their cares. Consult freely with them just as you would when in need of consultation in your private practice.

Your new Editor-in-Chief will seek your guidance. It is his sincere hope to serve you with the continued fidelity and unselfishness that exemplified the tenure of your retiring Editor-in-Chief.

Dr. Arthur Wells, I salute you.

CARL O. RICE, M.D.
Editor-in-Chief

THERAPY OF COMPLETE HEART BLOCK

COMPLETE HEART block occurs from many causes. In a review of 251 cases by Penton et al (Circ. 13:801, 1956) however, 169 or two-thirds occurred in patients with hypertension or coronary sclerosis. Thus the great majority of heart blocks can be expected in the older age groups who suffer from the degenerative diseases. In the Penton study 80% were 51 years of age or over.

The classic symptom of block, the Adams-Stokes syncopal attack, may occur in any stage of atrial ventricular block. Its larvate form may be slight dizziness or faintness. Therapy is directed principally against these symptoms and against the possibility of sudden death. It remains to be demonstrated whether or not restitution of a more normal frequency of heart beat will reverse the findings of heart failure so frequently associated with complete block.

Although physiologists have long known that heart as well as other muscle can be electrically stimulated, it is only in the last four years that attempts have been made to use this means clinically to stimulate the heart beat. Ingenious pacemakers have been recently devised making such stimulation on a long term basis for complete heart block practicable for human application. Elsewhere in this issue of Minnesota Medicine is a report by Hunter et al of the clinical application of such a pacemaker to a patient with complete block.

The first consideration of therapy should be to restore the normal conduction mechanism. This may be possible in acute myocardial infarction when the block is due to inclusion of the bundle of His in the periphery of the infarct and not actually in the necrosis itself. Also A-V block due to digitalis intoxication is amenable to obvious therapy.

When the block is permanent, medical management may be sufficient to prevent the complications of standstill and syncope. In addition to the drugs mentioned by Hunter et al, steroids, molar sodium lactate and chlorthiazide have all been reported to avert the syncopal attack. Selection of the case suitable for mechanical pacemaker is a nice surgical problem. The patient should be a medical failure in the sense that standstill occurs with syncope in spite of drug therapy. The mechanism of syncope should be known to be standstill and not ventricular fibrillation. The cerebral circulation should be reasonably intact.

Therapy of the patient in syncope with heart block is the therapy, up to a point, of any cardiac arrest. External stimulation such as pounding the chest may be followed by restoration of the ventricular beat. Pricking the epicardium with a needle may accomplish the same result. Intracardiac adrenalin and cardiac massage through the intact chest, (method of Kouwenhoven) combined with mouth to mouth artificial respiration when apnea is present is the next logical step. External pacemakers with percordial leads may be used but their effect is questionable. They may stimulate the muscles of the chest wall, often violently, without establishing myocardial contraction. If it is known that heart block has been present, it seems futile to proceed with thoracotomy which may merely add a contaminated chest wound to the already grievous medical problem.

Often the A-V block occurs with such wide spread damage that the myocardium is largely replaced by fibrosis, the heart is large, failure is present and the patient is unsuitable for any surgical interference. When the heart is not enlarged and the muscle is presumed to be adequate, the patient may be incapacitated principally by the capricious cessation of ventricular contraction. Such a patient may be rehabilitated by the insertion of a subcutaneously implanted battery driven electronic device capable of driving the heart for long periods.

REUBEN BERMAN M. D.
Minneapolis, Minnesota

The Board of Regents for the American College of Surgeons has notified its members in Hennepin County that an inspection of the financial and professional records of the Fellows practicing in Hennepin County will be undertaken. The American College of Surgeons does indicate that the surgeon should make his fee "commensurate with the services rendered and with the patient's rights," (his ability to pay) but it does not suggest that the surgeon should consult with the referring doctor in order to establish a maximum percentage relationship. To do so would be a deal and an inducement to referral.

Every doctor is entitled to make his own charges commensurate with his work. No doctor should be entitled to a fee that he has not earned.

Whether or not the audit which will be made by the American College of Surgeons reveals irregularities in financial arrangements between physicians, this method of investigation can be considered as one of the designs of organized medicine to police its own ranks. The surgeons of Hennepin County need not feel imposed upon for, if the practice of fee splitting does exist in Minnesota, it is no more prevalent in one county than in another, it would have seemed feasible for the American College of Surgeons to have made their pronouncement state-wide.

Certainly, if the surgeons of Minnesota are desirous of practicing ethical medicine, there should be no objection to this dictum from the American College of Surgeons. There may be those who welcome this help from the dilemma from which they cannot easily extract themselves.

CARL O. RICE, M. D.
Editor-in-Chief

C. L. Oppegaard, M. D.
President, Minnesota State Medical Association

President's Letter

RELATIVE VALUE STUDY — FIRST ORDER BUSINESS

This is my first letter as President of the State Medical Association. These monthly letters represent another avenue of liaison between the official family of your organization, the State Office, and you. They also become available to the public through the media of this monthly journal. Some of its purposes are to point to the developments in the medico-economics field; to stimulate solutions to the various problems by presenting these problems to you on this page; at times, to present the individual thinking of the writer, who, in so doing, must realize that he represents the medical association; to emphasize the actions taken by our House of Delegates and the Council that affect the policies, not only of medicine in our state, but in our nation.

The purpose of this first letter then is to call your attention to an action taken by the House of Delegates in May, 1960. It directed the Minnesota State Medical Association to conduct a Relative Value Study and this specific duty was assigned to the Committee on Medical Service for implementation. You, as members, are being called upon by this Committee for aid in this study by submitting to the State Office answers to a questionnaire which is being sent to all of you. This will be the only opportunity for you as individual members to give to the Committee the necessary information which will aid them greatly in the formulation of a Relative Value Index Study.

What Is This Relative Value Principle?

The principle attempts to define or set forth comparative relationships and values between respective medical services.

What is A Relative Value Study?

First, the study consists of a list of medical services. This makes up the nomenclature. Secondly, from this list of services, a relative value is assigned to each medical service, and in this assignment the measure of value of the service in relation to others in the same field of medical practice is evaluated; and thirdly, the basic measure of value is expressed in "units."

Is The Relative Value Study the Same As a Fee Schedule?

THE RELATIVE VALUE STUDY IS NOT A FEE SCHEDULE. It in no way sets anyone's schedule of fees. It attempts to establish the relationships between procedures realistically by giving each procedure unit values, and thus serves merely as a guide. It becomes a fee schedule only after the doctor himself supplies the co-efficient value to the unit.

Why is this Relative Value Study Urgent?

For many years, the medical profession has recognized the need for a guide which could be used to improve fee schedules. We, as a profession, operate under a multitude of them. Most of them have been written by a third party which includes those prepared by insurance companies; government agencies and labor-management groups. Confusions, frictions and misunderstandings therefore can easily come into the picture, as none of these schedules can accurately reflect the prevailing fees in any one community, or in any large unit area where it is used. The medical profession is in the unique position of being the only group able to determine the relation of procedures, one to another.

Why Are Relative Value Scales Needed?

The Relative Value Scales permit costs of rendering service to be estimated accurately. They're needed primarily to make health insurance more effective. They will give an accurate base line upon which insurance companies can base their costs, and thus serve the public more efficiently and economically. They will give us a realistic approach in negotiation with labor and management; with governmental agencies, such as Medicare; Old Age Assistance; Aid to Dependent Children; Blue Shield; Mills-Kerr Bill and sundry other contracts.

Does This Relative Value Schedule Once Adopted Remain Static?

No. The Relative Value Study will require change to keep abreast of the changes in medicine. There is no rule against changing a given scale. As procedures are introduced, others become obsolete. New methods of doing the same procedure increase or decrease the amount of time and skill required, with resulting change in the compensation the physician should receive for the service. Changing a fee schedule expressed in dollars is difficult; but a Relative Value Study, expressed in units, can readily be changed by the results of new surveys from time to time. Thus the standards can be changed to reflect new facts of medical practice. Thus the changes in the dollar schedules will follow naturally the changes in unit values without delay or negotiation.

The Committee compliments those members who have already completed their Relative Value Study questionnaires and returned them to the State Office. If you have not yet returned your questionnaire, won't you please give this matter your prompt consideration. *We need your help* to make this study a success. We wish to produce a *Schedule of Relative Values,* expressed in *Units* not *Dollars,* which can be used by every doctor in the state, in a way he sees fit. He can do this because the *Relative Value Study* is flexible; flexible to the point that it can reflect the conditions peculiar to every doctor's private practice and locality. *REMEMBER THE RELATIVE VALUE STUDY IS NOT A FEE SCHEDULE.*

C. L. Oppegaard

President, Minnesota State Medical Association

Medical Economics

Edited by the
Committee on Medical Economics
Minnesota State Medical Association
GEORGE EARL, M.D., Chairman

Physician Hospital Admission Practices Surveyed

A survey to determine hospital practices of Maryland physicians was recently conducted by the Opinion Research Corporation of Princeton, New Jersey.

The project was part of the current insurance education program of the American College of Radiology, conducted in cooperation with the medical and Chirurgical Faculty of the State of Maryland with financial assistance from the College, Maryland Radiological Society and the College of American Pathologists.

The completed report presents findings based on personal interviews with 222 physicians in the State of Maryland.

The purposes of this study were to:

1. Ascertain whether patients requiring elective diagnostic procedures in the State of Maryland are being hospitalized in order that these procedures might be paid for by the Blue Cross Insurance Plan. In addition, if this practice is taking place, to obtain some idea as to the extent to which it is going on.

2. Determine whether certain other uneconomical or unnecessary use of hospital facilities are occurring and, if so, the extent to which they occur.

3. Determine the degree of acceptance, among physicians, of various proposals to hold down Blue Cross rates in the State of Maryland.

4. Ascertain whether physicians are in favor of extending Blue Shield benefits to include certain procedures not presently covered by Maryland Blue Shield contracts.

Interviewing on this study was conducted during the period from mid-May to early June, 1960. Physicians interviewed were selected by probability sampling methods from the directory of active members of the Medical and Chirurgical Faculty of the State of Maryland as published in the August 1959 issue of the MARYLAND STATE MEDICAL JOURNAL.

The questionnaire was designed to obtain information on certain topics by use of two different questioning methods: direct questions asking the physician what he does in his own practice and indirect or projective questions asking the respondents about the practice of doctors in general. The direct questioning provides information on the extent to which certain practices occur. The indirect method provides information on the level of awareness among physicians that these things are occurring.

Survey Highlights Listed

A letter from Opinion Research Corporation was sent to physicians selected in the sample informing them they had been selected for interviewing and requesting their cooperation. In addition, interviewers carried a letter of introduction from the Medical and Chirurgical Faculty of the State of Maryland endorsing the study. Here are highlights from the survey:

Fifty-two percent of physicians routinely asked their patients whether they have health insurance.

Fifty-one percent of physicians who admitted twenty or more patients to hospitals in the month preceding the survey, estimate that more than three-fourths have hospital insurance. This is true of only twenty-nine percent of those physicians who admit six or less patients per month.

Seventy-two percent of physicians surveyed encountered resistance to diagnostic studies because of costs.

Eighty percent of the physicians had requests from patients for hospitalization to avoid these costs.

Seventy-seven percent feel that hospital facilities are used in an uneconomical or unnecessary manner.

There was general agreement that diagnostic cases are commonly hospitalized to save patients money.

Fifty-two percent of those interviewed admitted that they did such themselves.

Seventy-eight percent agreed that some physicians do this.

Forty-one percent said that insurance covering diagnostic work outside of hospitals would reduce the number of patients they hospitalize by either a substantial or moderate amount.

When shown a list of abuses of hospital facilities, large proportions of physicians say that they occur either frequently or occasionally.

Sixty-six percent say that auxiliary facilities are used to a greater degree than medically indicated.

Sixty-one percent say that there is unnecessary prolonged hospitalization.

Fifty-eight percent say that there are admissions for the patient's convenience.

Fifty-eight percent say that there are admissions for the physicians' convenience.

Seventy-seven percent agreed that provision of insurance covering diagnostic services for out-patient in physicians' offices would hold down rates for hospitalization insurance.

* * *

DOCTORS, INSURANCE COMPANIES UNITE TO HOLD MEDICAL COSTS

The progress made in cooperative efforts by doctors and the health insurance business aimed at containing the cost of medical care was reported recently at an eastern regional meeting of the Health Insurance Council, held at the Sheraton Plaza Hotel in Boston. Participating in the meeting were representatives of the Health Insurance Council state committees from the six New England states, New York, New Jersey, Maryland, Delaware, Eastern Pennsylvania, and the District of Columbia.

The purpose of the meeting was to confer on methods to increase the effectiveness of current programs throughout the country to stabilize the cost of hospital, surgical and medical care. The H. I. C., a group of eight insurance associations, works with the providers of health services on the national and local level in resolving mutual problems and providing more effective and satisfactory financing of health care expenses.

Creation of Review Committees Recommended

The creation by medical societies of review committees, functioning in an advisory capacity, which look into specific cases involving physicians' fees to determine whether the fee is consistent with the "usual" or "customary" charge for such services in the community was discussed by the group.

Mr. Lawrence B. Gilman, Vice President of the John Hancock Mutual Life Insurance Company and a member of H.I.C. Massachusetts State Committee, reported that as a result of discussions between the Massachusetts Medical Society and the H.I.C. there was established a joint committee of both organizations to identify and evaluate cases involving possible questionable charges by physicians under non-fee-scheduled major medical policies.

He said the new organization, the Joint Medical Charges and Health Insurance Advisory Committee, would function on a trial basis, but without the formal approval of the Massachusetts Medical Society, for about one year, and thereafter with modified working arrangements if further authorized by all parties.

Mr. Gilman said situations to be reviewed by the Committee include those with questions as to the amount of the doctor's bill, nature of treatment, other problems concerning the medical profession and problems concerning insurance.

Mr. Alfred F. Patton, Director of Claims of the Union Mutual Life Insurance Company, and Chairman of the H.I.C. Maine State Committee, reported that the Maine Medical Society instituted a review committee procedure which became effective September 1, 1960. He said the Society, through its Health Insurance Committee, reviews submitted cases directly.

Mr. Arthur M. Browning, Vice President in Charge of Group Insurance of New York Life and H.I.C. Chairman, reported on developments in California's Alameda-Contra Costa Medical Association three review committees. He said the committees have been very active and "have usually had excellent cooperation from the physicians involved in fee complaints."

He said in only one case in ten years has a physician failed to accept a recommendation to adjust his fee. In that instance, said Mr. Browning, the patient paid the fee recommended by the committee, the physician attempted to collect the balance of the bill and the committee appeared in court on behalf of the patient.

Doctor Paul I. Robinson, Medical Director of the Metropolitan Life Insurance Company and Chairman of the Medical Relations Subcommittee of the H.I.C.'s New York Professional Relations Committee, said the review program set up by the Nassau County (N.Y.) Medical Society has been accepted by all major hospitals in the county.

Doctor Maurice E. Rougraff, Medical Director of Knights Life Insurance Company and a member of the H.I.C. Pennsylvania State Committee, said medical society leaders of the state's 10th Councilor District set up a committee which has "reviewed forty-four cases dealing mostly with fees" since June 3, 1959.

"In only six cases," declared Dr. Rougraff, "has the committee decided definitely that the carrier had no logical complaint and recommended that the carrier pay the fee as charged. In all other instances, the carrier has been favored by the committee findings.

"Our results have been locally publicized within the professional sphere, and already claims experts are noticing a decrease in above schedule fees."

GROUP MEDICAL PRACTICES SHOW RAPID GROWTH IN U.S.

There are now more than three times as many group medical practice units in the United States as there were in 1946, according to a report presented in New Orleans to the American Association of Medical Clinics by Dr. S. David Pomrinse of Washington, D. C.

Doctor Pomrinse, Chief of Health Professions in the U.S. Public Health Service, Department of Health, Education and Welfare, presented a preliminary report on a survey of group practice in the U.S., conducted in 1959, along the same lines as one that was made in 1945. Marcus B. Goldstein, Ph.D., of the Public Health Service, collaborated in the preparation of both reports.

The response of the group practice units studied was almost precisely the same— about 80%—in both studies. Of these responding approximately 37% in both studies were found to be "true" medical practice groups of three or more full-time physicians providing services in more than one medical field or specialty, with their combined income distributed according to a prearranged plan.

Number Triples in Thirteen Years

In 1946, there were 368 groups of this type and in 1959, 1154 such groups found to be operating in the U.S. Since in both studies twenty percent of questionnaires were not returned, the total number of such groups in 1946 may be estimated at about 435, and in 1959, about 1,385.

In the 1154 multi-specialty groups of three or more physicians, are 10,085 full-time physicians and 1,365 physicians serving part-time, more than three times as many as in 1946. In addition there are 219 multi-specialty groups having fewer than three full-time physicians in which there are 355 full-time and 3,062 part-time physicians engaged.

While the number of these multi-specialty groups has grown by a national ratio of 3.1 since 1946, the largest regional growth ratio (4.4) has been in the South Atlantic states, followed by the East South Central (4.2) and the Pacific states (3.6). The smallest rate of growth (2.0) has been in the Mountain states and in New England (2.2).

Central States Lead in Number of Group Medical Practices

Actually, only 1.5 percent of all these groups are in New England, while thirteen percent of them are in the middle and south Atlantic states. The Central states account for 63.5 percent, the Mountain states for 7.3 percent and the Pacific states for 14.6 percent of all U.S. groups.

The percentage of all practicing physicians who are in group practice is also lowest in the New England and North Atlantic area, and greatest in the midwest. Nationwide, the study reveals that in 1959, 6.21 percent of all practicing physicians were in full-time group practice and 0.85 percent more are part-time group practitioners. This compares with 2.64 percent full-time and 0.35 percent part-time practitioners in 1946.

Size of Medical Groups Shows Slight Gain

As to the size of these medical groups, there have been slight increases in the proportion of groups in the smallest and largest categories since 1946. Fifty-seven percent have from three to five full-time physicians; twenty-four percent from six to ten physicians; 7.5 percent from eleven to fifteen physicians and eleven percent have sixteen or more full-time physician members.

The study shows that most newly formed groups are small, and they tend to grow with age. 899 (or seventy-nine percent) of the 1154 multi-specialty groups with three or more full-time physicians, were organized since 1940.

The Art of Medicine

PR

Carl H. Woyke
Editor

DEAR SIR:

Is your letter writing up to date? A business letter, poorly written, can be costly in terms of money and poor doctor—public relations. A well written letter can move mountains, win friends and make money.

Many times business letter writing is assigned to persons who have had no special training for this important phase of the business side of medical practice. The result is dull, stuffy, frigid and formal letters. Instead of exemplifying tact, friendliness and imagination, business letters all too often become mere pieces of expensive bond letterhead with a collection of trite or hackneyed words and phrases which completely lack interest or appeal. Someone has said that all too many business letters have so little warmth and understanding they sound as though they were written by a robot.

Are Your Letters Old Fashioned?

Here are some of the most common hackneyed business letter expressions with their modern equivalents. How do your letters compare?

Old Fashioned	Modern Equivalent
As per your letter of the 15th at hand	In your letter of June 15
We are this day in receipt of	Today we received
Hereafter and Henceforth	In the future
Kindly advise the undersigned	Please let me know
Due to the fact that	Since
In the event that	If
In accordance with your wishes	As you requested

* * *

DON'T HIDE YOUR LIGHT

The importance of "cooperation" between physicians and newsmen in order to further improve the working relationship between the two professional groups, was stressed at a panel devoted to this subject at A.M.A.'s 1960 PR Institute held in Chicago.

In his remarks, moderator Jim Reed, editor of THE AMA NEWS, said "While medical public relations have improved tremendously during the past few years, there still is an occasional encounter between physicians and newsmen resulting in disappointment or annoyance on one side or both."

Both Sides Have Problems, Obligations

"Usually these encounters stem from a misunderstanding of each other's problems and obligations.

"There are cases in which doctors have criticized the public information media for inaccurate reporting of medical events . . . for 'blowing up' medical stories . . . and for 'jumping the gun' and prematurely announcing inconclusive but promising discoveries.

"On the other hand," he continued, "newsmen complain that physicians often are uncooperative in giving out news about their profession and their patients . . . hiding behind the medical code of ethics and deliberately withholding information of a scientific nature."

The purpose of the panel was to put before medical society executive and public relations personnel some of the special problems that arise when newspaper reporters, radio and TV newsmen seek to cover medical news.

Poor Attitudes Mean Poor Relationships

The first panelist — Charles Harrison, news director at station WEEK-TV, Peoria, Ill. — said that a poor attitude on the part of either party is a major cause of bad relationships. He called on physicians and newsmen to work 365 days a year to improve their personal public relations.

Need for Personal Calls to Press Emphasized

John F. Rineman, Harrisburg, Pa., Executive Assistant to the Pennsylvania Medical Society, told the medical society executives not to discount the value of making personal calls on all news outlets in their area. Newsmen are more apt to check with you for information if you have established previous personal contact.

The city editor of the SPRINGFIELD (OHIO) DAILY NEWS told the capacity audience that the purpose of publicity is to gain attention. Loren G. Schultz said, "The media is there to use and God help you if you don't." He also noted, "The golden rule is the way to good public relations."

A.M.A. Committee Insured Film, Radio, TV Accuracy

Dr. James Regan, Los Angeles, a member of A.M.A.'s Physician Advisory Committee on Radio, Television and Motion Pictures, outlined the successful work carried on by the committee during the five years of its existence. This work, he said, has enabled medicine to be portrayed accurately and with authenticity by the electronic media.

Provide Press With Prompt Accurate Facts

At the conclusion of the panel presentation, Mr. Reed summarized, "It is to the advantage of physicians, hospitals, and the press that the public be provided with prompt and accurate information within the bounds of good taste.

"Since the press is responsible for what it publishes or puts on the air, it must be the sole judge of what shall be published.

"But where the source of news is a physician, the press should assume the obligation to consider the life and health of patients and to recognize the ethics by which doctors are bound.

"Perhaps both the medical profession and the press should go to each other periodically for a checkup — to see how they are doing. Find out if your relations are really working. If problems develop, sit down and talk them over . . . diagnose the disease and treat it. Practice preventive medicine in press relations, too."

NO NEED TO BE IN THE DARK

A new brochure describing the services and activities of the A.M.A.'s Department of Medical Motion Pictures and Television is now off the presses!

Entitled "If You're in the Dark About Using Films," this leaflet is designed to answer many of your questions about securing scientific and health films for your medical society's use.

Perhaps you will want to consider using films at your monthly professional meetings or for your special programs for the general public. This publication is designed to be helpful in showing you the role that this department can play in your plans for various society activities.

Additional copies of this leaflet are available on request. If you have any further questions concerning films, please feel free to contact your state office.

Minnesota Blue Shield

A year ago last month, Minnesota Blue Shield embarked on its program of centralizing all operations with its own organization.

It has been a busy and eventful year.

The first step was the establishment of the Division of Enrollment and Service, creating a "sales organization" devoted exclusively to Blue Shield.

A Duluth office was also opened to serve the many groups in the Range Area.

An IBM data-processing department was set up to handle billing and accounting operations.

Early in 1960, Blue Shield purchased the building at 2218 University Avenue, St. Paul, which houses its new headquarters. The move to the building was made on July 15, following completion of extensive renovation and remodeling.

The new headquarters is a three story building, with basement, totaling more than 24,000 sq. ft. of space.

During the year, Blue Shield officials addressed virtually all county and regional medical societies in the state to report on the reorganization.

Almost without exception, the societies unanimously endorsed the Blue Shield program offering coverage for diagnostic services.

This valuable diagnostic coverage was added to all contracts during the year and by the end of the first nine months of 1960 claims for 50,507 diagnostic X-rays and 72,579 diagnostic laboratory services were paid.

The year 1960 was also noteworthy for the two successful enrollment periods held for the Minnesota Blue Shield Senior Citizen Plan, with members of the Minnesota State Pharmaceutical Association cooperating with participating doctors in displaying Senior Citizen applications.

During 1960, Minnesota Blue Shield began sponsorship of the radio series, "Doctor's House Call," featuring Dr. James Rogers Fox, on WCCO Radio, Minneapolis. Dr. Fox, representing the Minnesota State Medical Association, has a large and loyal listening audience. His programs are recognized as making a significant contribution to public health education in Minnesota.

In the year ahead, Minnesota Blue Shield is pledged to continue working for subscribers and participating doctors with the same dedication to service that has marked the Minnesota Blue Shield program since the beginning.

* * *

The Minnesota Blue Shield Senior Citizen Plan, which met such success during the enrollment periods of 1960, will now be offered on a year-round basis, the board of directors announced in January.

Under this plan, persons 65 and over, who are not already Blue Shield subscribers, receive medical-surgical coverage at a cost of $2.95 per month. The plan provides benefits for 120 days of in-hospital medical care, the full range of Blue Shield surgical benefits, electroshock therapy, X-ray treatment for specific conditions, endoscopic examinations and certain anesthesia services. Also included are benefits for diagnostic X-ray and laboratory services, when performed in the doctor's office, the patient's home, or the out-patient department of a hospital.

* * *

The move to the new Blue Shield headquarters and the establishing of IBM operating machines for accounting functions produced unavoidable delays in the paying of some claims to doctors. Any delay or inconvenience which resulted is regrettable. However, the headquarters staff, and especially the IBM department personnel, have worked evenings and week-ends to bring claims payments up to date. By late November, the backlog had been finally disposed of, and a normal flow of claims payments was underway. Participating doctors can now be assured of even prompter service than in the past.

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Medical Education

AREA FOREIGN PHYSICIANS FAIR WELL IN ECFMG EXAMS

Foreign interns and residents from the upper Midwest who took Foreign Medical Graduate examinations in September, passed and failed in proportion to the national average.

Nationally, more than seventy percent of the foreign physicians who took the last ECFMG examination in September passed. The total was 5,306 out of 7,308. Of the 1,405 foreign doctors who took the examination in the sixty-six centers outside the United States, 926 passed.

One hundred and forty-nine upper midwest interns were examined in Minneapolis, thirty-seven in Rochester; eighty-five in Milwaukee, Wisconsin; and thirty-two in Grand Forks, North Dakota.

In Minneapolis fifty-three foreign interns and residents from eight hospitals took the examination. Seventy-one and seven-tenths percent (eleven interns and twenty-seven residents) passed; twenty-eight percent (eight interns and seven residents) failed.

In St. Paul, three foreign interns took the examination and passed. Four residents took the examination and passed.

The thirty Mayo Foundation Fellows who took the examination in Rochester passed.

Thirty of thirty-two University of Minnesota hospitals foreign trained residents passed.

NUMBER TAKING SEPTEMBER ECFMG EXAMINATION

HOSPITAL NAME	Total Interns and Residents	Total Foreign Interns and Residents	Interns		Residents	
			Number Passed	Number Failed	Number Passed	Number Failed
MINNEAPOLIS						
Fairview	8	8	0	0	5	0
Glen Lake Sanitorium	1	0	0	0	0	0
Lutheran Deaconess	8	8	0	0	3	4
Methodist	5	2	0	1	1	0
Mpls. General	83	0	0	0	0	0
Mount Sinai	24	22	3	2	6	0
Northwestern	13	10	2	0	1	0
St. Barnabas	15	15	4	2	3	1
St. Mary's	18	9	0	0	5	2
Shriners	3	0	0	0	0	0
Swedish	20	20	2	3	3	0
U. of M. Hospitals	—	—	—	—	—	—
Veterans Adm.	132	0	0	0	0	0
TOTAL	330	94	11	8	27	7
ST. PAUL						
Ancker	48	3	0	0	0	0
Bethesda	6	0	0	0	0	0
Gillette	7	0	0	0	0	0
Midway-Mounds	5	4	0	0	1	0
Miller	25	0	0	0	0	0
St. Joseph's	4	0	0	0	0	0
St. Luke's	12	12	3	0	3	0
TOTAL	107	19	3	0	4	0
GRAND TOTALS	437	113	14	8	31	7

— Information not available from hospital and Interns and Residents.

A.M.A. REAFFIRMS FOREIGN PHYSICIAN POLICY

The American Medical Association will stand fast on its policy relating to graduates of foreign medical schools, because it believes that they should meet the same minimum standards of education as graduates of U. S. medical schools as nearly as can be measured.

American students graduating from foreign medical schools are required to pass this same examination before being permitted to continue their medical education in the United States as interns or residents which inevitably involve patient care.

Dr. Leland S. McKittrick, Boston, chairman of the A.M.A. Council on Medical Education and Hospitals, said that through mutual agreement with the State Department in Washington, the American Medical Association, the American Hospital Association, and the Association of American Medical Colleges, hospitals will be urged to develop a special educational program for this group of foreign graduates who failed. The program, however, will not involve patient care. The proposal calls for the program to be carried out until June 30, 1961. This will permit the U. S. Immigration and Naturalization Service to extend the education exchange visas of these foreign doctors and enable them to take the Educational Council for Foreign Medical Graduates examination next April 4.

Details of the educational program, Dr. McKittrick said, will be worked out by each individual hospital in order to conform to the specific educational needs of the foreign doctors. Under such a proposal there will be no sudden forced exodus of those who have failed previous examinations. After December 31, hospitals face loss of approval of their intern and residency programs if the programs include foreign medical graduates who are not certified by ECFMG.

MUST PASS TESTS NOW BEFORE ENTERING U. S.

Hereafter, foreign doctors, who seek training as interns and residents in this country under the exchange program, must pass examinations in their own countries before coming to the United States. Only then will they be allowed to apply for a five-year exchange-visitor visa.

QUALIFIED DOCTORS — EVERY PATIENT'S RIGHT

"We must recognize the right of every patient in an American hospital to a quality of care which can be given only if every physician — regardless of origin — is fully qualified. But we must be equally interested in the impact of America on the foreign physician coming to these shores," said Dr. McKittrick.

"The high standards in intern and residency programs maintained by the A.M.A. serve only one purpose: to insure the highest quality of medical care to all hospital patients."

EXAMINATION FAILURE MEANS CURTAILED U. S. STAY

Dr. McKittrick emphasized, therefore, that foreign graduates who have failed to pass the examinations conducted by the ECFMG will *not* be permitted to continue with their intern and residency program after December 31, but we have been assured by the State Department that they will be permitted to remain in the United States until June 30, 1961, providing they are enrolled in an acceptable new program developed by the hospital. This program, Dr. McKittrick said, will have nothing to do with direct patient care, but will provide an opportunity for the foreign physician to continue his education and better prepare him for future examinations.

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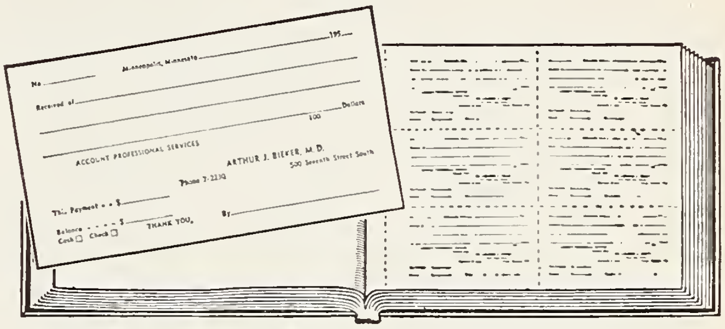

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Board of Medical Examiners

FORMER HOSPITAL EMPLOYEE SENTENCED FOR UNLAWFULLY ATTEMPTING TO OBTAIN BARBITAL DRUG

Re: State of Minnesota —vs— Myron Eugene Purdy

On November 10th, 1960, Myron Eugene Purdy, 36, 915 E. 14th St., Minneapolis was sentenced to a term of six months in the Minneapolis Workhouse by the Hon. Levi Hall, Judge of the District Court of Hennepin County, for attempting to obtain a barbital drug without a legal prescription. Judge Hall then stayed the execution of the sentence for a period of one year and placed the defendant on probation during this time. When he was first arraigned in District Court, Purdy pleaded not guilty to the charge but on September 29th, 1960 he withdrew his former plea and entered a plea of guilty.

Purdy was arrested on July 24th, 1960 after he had presented a prescription for compounding at the Kapp Drug, 1421 Nicollet Ave., Minneapolis, the prescription purportedly being signed by a Minneapolis physician and calling for 30 five-milligram tablets of dexamyl. Mr. Richard D. Carlson, the pharmacist to whom Purdy presented the prescription for filling, recalled having read in a bulletin that the name of this particular physician had been forged recently on a number of prescriptions in Minneapolis. He therefore instructed one of the clerks in the drug store to keep the defendant engaged in conversation while he called the police which resulted in Purdy's arrest.

In a signed statement the defendant admitted that he had forged the doctor's name to the prescription blank, which he had stolen from a St. Louis Park hospital where he had been employed since September 1959. He also admitted having forged approximately twenty other prescriptions since January 1st, 1960. According to Purdy's statement, he formerly used narcotic drugs while employed in a La Crosse, Wisconsin hospital. However, the hospital administrator suspected him of this and made accusations whereupon Purdy confessed which resulted in his being sent to the Mendota State Hospital in Madison, Wisconsin for treatment. Purdy holds no license to practice any form of healing in the State of Minnesota.

MINNEAPOLIS WOMAN SENTENCED FOR OBTAINING BARBITAL DRUG WITHOUT A LEGAL PRESCRIPTION

Re: State of Minnesota —vs— Rosella M. Scurrah

On October 3rd, 1960 Rosella M. Scurrah, 39, 4921 Logan Ave. S., Minneapolis was sentenced by the Hon. John A. Weeks, Judge of the District Court of Hennepin County, to a term of thirty days in the Women's Detention Home, pursuant to her plea of guilty to a charge of obtaining a barbital drug without a legal prescription. However, Judge Weeks then stayed the execution of the sentence for one year and placed the defendant on probation for the same period of time. Mrs. Scurrah was charged with this offense in a criminal complaint issued by the Hennepin County Attorney's Office on September 28th, 1960, the complaint being signed by a representative of the Minnesota State Board of Medical Examiners.

The defendant was arrested after she had presented for compounding, at the Lynnhurst Drug, 4555 Bryant Ave. S., Minneapolis, a prescription which was purportedly issued by a Minneapolis physician in the name of one Jessica Olsen for twenty-four 1½ gr. capsules of seconal. Because the pharmacist became suspicious after filling the prescription he took down the customer's license number as she drove away in her car. When the doctor was contacted and declared the prescription to be a forgery the automobile license number was traced to the defendant whereupon she was apprehended and questioned.

Mrs. Scurrah gave a signed statement in which she admitted that she had written out the prescription after taking the prescription blank from the office of the physician. She also admitted that she had forged a similar prescription for seconal in March or April 1960, obtaining the blank from the same physician's office. In attempting to explain the reason for her conduct, the defendant stated that she suffered from migraine headaches.

MINNEAPOLIS WOMAN SENTENCED ON ABORTION CHARGE

Re: State of Minnesota —vs— Lillian E. Strader

On October 19th, 1960, Lillian E. Strader, 33, 3901 Fifth Ave. S., Minneapolis was sentenced for the crime of abortion by the Hon. John A. Weeks, Judge of the District Court of Hennepin County, to a term of three years in the State Reformatory for Women at Shakopee, Minnesota, the execution of the sentence being stayed by the Court, however, and the defendant placed on probation for a period of three years. When Mrs. Strader was first arraigned in District Court she had entered a plea of not guilty to the information charging her with abortion, which is a felony under the law, but on September 26th, 1960 just prior to the beginning of the trial she withdrew her plea of not guilty and entered a guilty plea. The matter was then referred to the Hennepin County Probation Office for a pre-sentence investigation.

The defendant was arrested after a 23-year-old student had been hospitalized at a Minneapolis hospital with a temperature of 106.4 degrees after submitting to an abortion performed by Mrs. Strader. A joint investigation by the Minneapolis Police Department and the Minnesota State Board of Medical Examiners disclosed evidence which indicated that several of the patient's fellow students had been informed of her physical condition and that it was her desire to have her pregnancy terminated. Subsequently she was contacted at a Minneapolis cafe on East Hennepin Avenue by a man referred to as "Sam," who asked her name and if she was the person who was interested in having an abortion. When she replied in the affirmative the man told her that she should find a place where the abortion could be done and the cost would be $200. The arrangements were completed and Mrs. Strader attempted on two separate occasions to perform the abortion by means of a catheter but when the patient's temperature started rising she was taken to a hospital by her student friends.

The rseults of the investigation were presented to the office of the Hennepin County Attorney with the result that a criminal complaint was issued in which Mrs. Strader was named as defendant. Mrs. Strader demanded a preliminary hearing on the abortion charge in Minneapolis Municipal Court and after hearing the testimony of the witnesses for the state Judge Luther Sletten bound the defendant over to the District Court for trial. Mrs. Strader has no training in medicine and holds no license to practice any form of healing in the State of Minnesota.

Minnesota State Board of Medical Examiners
J. P. Medelman, M. D.,
Secretary

Woman's Auxiliary

YOUR COUNTY SOCIETIES . . .

Region Four

"Program Planning for the Small Auxiliary" was the address given to members of Region Four of the State Auxiliary at a meeting held at the home of Mrs. John W. Gridley, Regional Advisor, at Arlington, Minnesota.

Giving the address was Mrs. M. I. Hauge of Clarkfield.

Other speakers included Mrs. E. R. Hudec of Echo, who discussed ways of educating people in water safety and highway first aid. Mrs. Walter P. Gardner of St. Paul, current state president, and Mrs. W. A. Merritt, Rochester, president-elect, also attended the meeting.

Hennepin

The Annual Red Carnation Ball given by members of the Woman's Auxiliary to the Hennepin County Medical Society for their physician husbands was given recently at the Minnikahda Club in Minneapolis.

The party, to honor doctors for their services to the community, was organized in Georgia more than a decade ago. The red carnation is the medical profession's official flower.

As a special feature and real favorite among the doctors, the "Idol of the Airlanes," Jan Garber played for dancing.

Mrs. Clyde Cabot was general chairman and Mrs. Arthur Russeth was co-chairman. Other committee leaders were: Mrs. Robert E. Nord and Mrs. Howard Frykman, reservations; Mrs. Harry B. Hall and Mrs. Harold Buckstein, invitations; Mrs. Henry E. Hoffert and Mrs. Edward C. Maeder, decorations; Mrs. Charles Neumeister, social hour; Mrs. Joe M. Neal, hostesses, and Mrs. Julien V. Petit, publicity.

Hostesses for the event were the Mmes. Harold Benjamin, W. J. Bushard, Lyle French, J. N. Giebenhern, Joseph C. Giere, Meyer F. Golder, Paul N. Larson, John S. Milton, Alton C. Olson, John T. Pewters, Owen Robbins, John E. Smith, William Stromme and V. R. Zarling.

Washington

The Washington County Medical Auxiliary met during November at the home of Mrs. John Stuhr. Mrs. C. L. Sheedy of Austin showed the group the slides of her trip around the world.

Range

At the first meeting of the 1960-61 season of the Range Medical Auxiliary, projects for the coming year were discussed. The Student Grant Aid will again be the main project for the year. The auxiliary awards a sum of money to one or two students annually who are entering some phase of the medical profession, such as nursing, medical technology, X-ray, physical therapy or medical records. Qualifications for the aid are the need for assistance, above average grades, and a sincere desire to help willingly in their chosen field.

Zumbro Valley

Zumbro Valley Medical Auxiliary held its first quarterly meeting of the year at the Mayo Foundation House. The fifty women attending heard a talk by Mrs. Robert W. M. Frater on the history of South Rhodesia and the Union of South Africa.

Mrs. Frater, whose husband is a fellow in the Mayo Foundation, showed a film on her home at Capetown and the surrounding countryside. She was born in Southern Rhodesia and attended Rhodes University in the Union of South Africa. She and her husband plan to return to South Africa, Mrs. Frater said.

During a social hour before the meeting, refreshments were served, with Mrs. Ernest A. Olson of Pine Island and Mrs. Mark Anderson Sr., pouring.

Presiding for the first time was Mrs. Martin Van Herik, president. Other new officers are Mrs. Howard A. Anderson, vice president and program chairman; Mrs. J. E. Verby, secretary; Mrs. P. J. Osmundson, treasurer. Chairmen are Mrs. G. D. Davis, and Mrs. N. O. Hanson, Membership; Mrs. G. A. Koelsche, Legislative; Mrs. R. E. Symmonds, American Medical Education Foundation; Mrs. A. A. Frethum and Mrs. G. D. Molnar, Ability Building Center; Mrs. James K. Masson, Publicity; Mmes. D. C. Dahlin, H. F. Polley and O. H. Beahrs, all past presidents, advisers.

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In Memoriam

JOHN C. BROWN

Dr. John C. Brown, a former eye, ear, nose, and throat specialist of St. Paul, died of a coronary attack at the age of eighty-four on November 27, 1960 in Los Gatos, California, whither he had moved in 1951.

Dr. Brown was born in Carthage, Missouri on August 30, 1876. He received a degree in biology from Stanford University in 1899 and taught comparative anatomy, zoology, and ornithology at Stanford before moving to Minnesota where he received his medical degree from the University of Minnesota in 1907. He held the title of Assistant Professor of Comparative Anatomy at the University and continued teaching for some time after receiving his medical degree. He was on the faculty of the University for forty-one years before retiring as Assistant Professor of Ophthalmology in 1950.

After taking some postgraduate study in his specialty he began practice in St. Paul in 1907 and practiced continuously until his retirement in 1950.

Dr. Brown was a charter member of the American Academy of Ophthalmology and Otolaryngology, the Minnesota Academy of Ophthalmology and Otolaryngology, Alpha Omega Alpha, Phi Gamma Delta, and Nu Sigma Nu. He read his thesis before the Minnesota Academy of Medicine entitled "The Development of The Accessory Sinuses in Animals" on February 16, 1921.

Since childhood Dr. Brown had been interested in comparative anatomy and his collection of more than 1100 animal skulls will be donated to Stanford University. His collection of vertibrate skulls is one of the most extensive in the world. Included are many reptile and amphibian skulls which attracted many classes of San Jose State College biology students to his home in Los Gatos. One of Dr. Brown's unique specimens is a large skull of a python snake which was given him by the famed Frank Buck who caught the twenty-eight foot python in Malaya. Included among the skulls in his collection also are those of a lioness, monkey, bear, snapping turtle, anteater, catfish, giant salamander and a koala.

Dr. Brown possessed a vast fund of knowledge in the field of comparative anatomy and wrote numerous articles in this field. He continued writing upon his retirement and removal to Los Gatos where his son, Gordon, is practicing medicine. Dr. Brown is also survived by his wife, Rena, and another son, John A. of St. Paul.

Of Dr. Brown it can be truthfully said "He was a gentleman as well as a scholar."

ADELAIDE M. JOHNSON

Doctor Adelaide M. Johnson, nationally known psychiatric authority on juvenile delinquency and the behavior of the young, died November 20, 1960. She was fifty-five years of age. Cause of death was due to cancer.

Doctor Johnson served at the Mayo Clinic from 1947 until 1957 when she resigned to engage in private psychiatric practice. At the same time, she received an appointment as clinical professor of psychiatry from the University of Minnesota.

Born in Rockford, Illinois, Doctor Johnson received both her Doctor of Philosophy and Doctor of Medicine degrees from the University of Chicago from which she graduated in 1932.

She did graduate work in psychiatry at Johns Hopkins University Medical School, Baltimore, Maryland and at the Institute of Juvenile Research, Chicago.

In 1938 she became an Associate in Criminology at the University of Illinois, and in 1942, a member of the staff of the Institute for Psychoanalysis, both in Chicago.

Doctor Johnson was a member of the Zumbro Valley Medical Society, the Minnesota State Medical Association and the American Medical Association.

Survivors include her husband, Doctor Victor Johnson, Director of the Mayo Foundation for Medical Education and Research, and her father J. F. McFayden, Rockford, Illinois.

ANTHONY A. MEYER

Doctor Anthony A. Meyer, former mayor of Melrose, Minnesota, died November 12, 1960, at the age of seventy-five.

Doctor Meyer practiced in Melrose for thirty-eight years until he retired in 1958. He had served as mayor of Melrose for twenty-five years.

Doctor Meyer was born in Freeport, Minnesota in 1885. His preliminary education was obtained at Freeport High School and Valpariso University from which he graduated in 1911 with his Bachelor of Science Degree. His medical education was obtained at Valpariso University and the University of Illinois from which he graduated in 1914.

Doctor Meyer served as a Great Northern Railway Surgeon, a member of the Knights of Columbus, Fourth Degree; the American College of Surgeons, the Stearns-Benton County Medical Society and the American Medical Association. He was granted life membership in the Minnesota State Medical Association in 1958.

Survivors, in addition to his wife, include two sons, Robert A. and Norbert A., Minneapolis; three daughters, Mrs. Hoyt H. Haycock, Pine City, Minn., and Mrs. Patrick A. Gallagher and Mrs. Dale E. Johnson, Minneapolis, and a brother, Henry A., Freeport.

NORDAHL P. PETERSON

Doctor Nordahl P. Peterson, Minneapolis physician and surgeon and former educator, died November 15, 1960, in Swedish Hospital. He had suffered a cerebral hemorrhage while watching a University of Minnesota football game in Memorial Stadium. Doctor Peterson was seventy-two years of age at the time of his death.

Doctor Peterson was a native of Aberdeen, South Dakota, and was graduated from St. Olaf College, Northfield, Minnesota, in 1913.

He was a teacher and school superintendent in southern Minnesota for several years, then entered the University of Minnesota and received a medical degree in 1928.

Doctor Peterson was a member of the State Board of Medical Examiners and was formerly Chief of Staff at Swedish Hospital.

Other professional memberships included the Mississippi Valley Medical Society, the American Academy of General Practice, the International College of Surgeons, the Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Survivors include his wife, Beatrice; a daughter, Mrs. W. K. Leutz, Mount Prospect, Illinois; a son, Doctor Gordon N., Rochester, Minnesota; six grandchildren; three sisters, Mrs. Dora Jerdee and Mrs. Willis M. Duryea, both of Minneapolis, and Mrs. Torger Thompson, Rushford, Minnesota; and three brothers, Doctor Oliver H. and Doctor P. E. Peterson, both of Minneapolis and Alfred of Frost, Minnesota.

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Meetings and Announcements

NATIONAL

A five-day full-time course on Surgery of the Hand will be offered by the New York University Medical Center, March 6-11, 1961. The class is limited to forty participants and the tuition is $125. For applications communicate with the office of the Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

* * *

American College of Allergists Graduate Instructional Course and Seventeenth Annual Congress, March 12-17, 1961, the Statler Hilton, Dallas, Texas. For information, write John D. Gillaspie, M.D., Treasurer, 2141 14th Street, Boulder, Colorado.

* * *

The Gill Memorial Eye, Ear and Throat Hospital of Roanoke, Virginia, will hold its Thirty-Fourth Annual Spring Congress in Ophthalmology and Otolaryngology and Allied Specialties, April 10-15, 1961.

STATE

Medical Continuation Courses to be presented at the Center for Continuation Study, 1342 Mayo Memorial, Minneapolis 14, Minnesota. They are: February 6-8, Anesthesiology for Anesthesiologists; February 9-11, Surgery for Surgeons; February 13-18, Neurology for Neurologists; February 27-March 1, Pediatrics for Pediatricians and General Practitioners; March 13-15, Allergy for Allergists and General Practitioners; March 17-18, Trauma for General Practitioners; and March 27-29, Urology for Urologists.

Regional Meeting of the Academy of Phychosomatic Medicine, Wednesday February 15, 1961, Hotel Radisson, Minneapolis, Minnesota, beginning at 6:00 p.m. Dr. Wilfred Dorfman, Past President of the Academy and Editor of the Journal Psychosomatics will discuss Masked Depression. For information and reservations contact Kenneth W. Teich, M. C., Chairman Regional Areas Coordination Committee, Medical Arts Building, Duluth, Minnesota.

MARY PUTNAM JACOBI FELLOWSHIP OFFERED

The Woman's Medical Association of the City of New York offers the Mary Putnam Jacobi Fellowship to a graduate woman physician, either American or foreign, The Fellowship of $1,000 will begin October 1, 1961, for a period of one year. At the discretion of the Committee, an award of $2,000 may be given biannually. The recipient will be expected to make a report at the end of the fourth month following which the balance will be awarded subject to the approval of the Committee. The Fellowship is given for medical research, clinical investigation or postgraduate study in a special field of medicine. The recipient is expected to devote full time to the Fellowship, but exception may be made under special circumstances.

Applications may be obtained from the Chairman of the committee and must be returned before March 1, 1961. Successful candidates will be notified not later than May 1, 1961.

ARTHRITIS CONFERENCE PLANNED

Plans for a national conference of leaders concerned with the health menace of arthritis quackery were announced today by Floyd B. Odlum, National Chairman of The Arthritis and Rheumatism Foundation. The conference will be held early in March, 1961, in Washington, D. C.

Mr. Odlum explained that the purpose of the conference will be "to consider ways in which all groups and individuals concerned with the deceitful promotion of arthritis remedies and 'cures' can move against the problem with maximum effectiveness to protect our 11,000,000 victims of this crippling disease."

Invitations to the Washington meeting, according to Mr. Odlum, will go to representatives of the federal protective agencies, national health agencies, advertising agencies and information media groups. Representatives of consumer groups, pharmaceutical manufacturers' association and labor organizations also will be invited to attend. The meeting will cover the quackery problem from every viewpoint — medical, legal, promotional, manufacturing and consumer.

MARCH OF DIMES

The State of Minnesota has received $1.16 in value for every dollar realized from the state's March of Dimes over the past 23 years, it was disclosed today in a financial summary prepared by the National Foundation.

While the March of Dimes has netted $12,218,289.16 from Minnesota campaigns, a total of $14,159,654.47 has been allocated by the National Foundation for aid to the state's disease victims and for research and education projects conducted within the state.

The difference has been supplied by the national office from funds raised throughout the rest of the nation.

In the past 23 years, Minnesota's 89 chapters of the March of Dimes organization raised $13,219,476.57 at an average fund raising cost of 7½ percent. Of this amount, $12,019,795.70 has been available to the chapters in carrying out their extensive patient aid programs, including advances of $7,156,645.85 from the national office to meet local emergency situations.

In addition, grants totaling $2,139,858.77 have been made in support of research and professional education projects in the state. Principal recipient of these funds has been the University of Minnesota, which has received 45 grants totaling $2,124,316.80. The State of Minnesota Department of Health received $15,541.97.

Increasing the total poured into the state in the fight against disease, the national office has sent into Minnesota $83,953.50 worth of Salk vaccine and 597,098 cc's of gamma globulin in support of its polio prevention programs.

Two years ago, the National Foundation for Infantile Paralysis changed its name to the National Foundation in expanding its areas of interest beyond polio to include birth defects and arthritis, using the scientific knowledge and experience gained in the fight against polio.

The New March of Dimes takes place throughout the month of January.

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The Physician's Diary

"The Neurosis in the Light of Rational Psychology" is the title of a book by a noted Dutch woman psychiatrist, Dr. A. A. A. Terruwe, which has been translated into English by **Dr. C. W. Baars** of Rochester. Doctor Baars has studied with the author in Nymegen, Netherlands. Among her other publications is "Psychopathic Personality and Neurosis," also translated by Dr. Baars.

* * *

Doctor James Rogers Fox, Minneapolis, represented the American Medical Association at a recent meeting of the Twin Lakes Chapter of the Minnesota Society of Professional Engineers. At that meeting, three professional societies were discussed regarding their respective history, organization and society problems. Doctor Fox stated that eighty-six percent of all doctors have membership in the A.M.A.

* * *

Lake Lillian, Minnesota, will have part-time medical service shortly. **Doctors Leo Furr** and **George Bingham**, both of Bird Island, are making arrangements to provide Lake Lillian with a doctor three afternoons a week. If the plan proves successful, there is a possibility of full-time medical service.

* * *

Doctor Jan. H. Tillisch, Mayo Clinic consultant has been named to an eleven-man Medical Advisory Council established by the Civil Air Surgeon of the Federal Aviation Agency. The Council has been established to assist the FAA's Bureau of Aviation Medicine with plans for developing, operating and coordinating its medical program. Doctor Tillisch is medical director of Northwest Orient Airlines and chairman of the Committee on Aviation Medicine for the A.M.A.

* * *

A Duluth physician, **Doctor John F. Schmid**, was elected President of the Minnesota Dermatologic Society at a meeting November 4, 1960, at the University Hospital.

* * *

About 150 Medical doctors and pharmacists attended a testimonial dinner for **Doctor Clarence Jacobson**, Chisholm, Immediate Past President of the Minnesota State Medical Association. Doctor Jacobson is the only doctor from the Range area to head the State Association. Among speakers at the dinner meeting were **Doctor Donald McCarthy**, Fort Snelling, Chairman of the Council of the M.S.M.A.; **Doctor C. L. Oppegaard**, Crookston, President of the M.S.M.A.; **Doctor Les N. Dale**, Red Lake Falls, Chairman of the Public Policy Committee of the M.S.M.A.; and **Doctor B. P. Owens**, President of the Range Medical Association. A plaque was presented to Doctor Jacobson from the Hibbing-Chisholm-Buhl druggists. The plaque stated that Doctor Jacobson "has gained the highest respect and admiration of the pharmacists of the Iron Range and throughout the state of Minnesota through his understanding of the problems and objectives of the members of other health professions, and by his friendly and farsighted relations with the pharmacy profession."

* * *

Range pharmacists honored Dr. Clarence Jacobson, Chisholm, the Immediate Past President of the Minnesota State Medical Association at a Testimonial dinner held November 7, 1960, in Hibbing. Those attending included left to right: Dr. Les Dale, Red Lake Falls, Chairman of the Public Policy Committee of the Minnesota State Medical Association; Dr. Clarence Jacobson; Glade Lenz, Hibbing, Chairman of the Testimonial Dinner; and Jay Shapiro, President of the Range Pharmaceutical group.

Doctor Joseph Kiser, Minneapolis, spoke on "Human Organ Transplant" at a dinner meeting of the Northwestern Hospital Alumnae Association recently.

* * *

Doctor Myron Doebler has closed his practice in the Ellendale Clinic and has left that community. To date, Doctor Doebler has now located in Bagley, Minn.

* * *

A member of the Section of Urology of the Mayo Clinic, **Doctor Laurence F. Greene**, has been appointed to the editorial advisory Board of GP, official medical journal of the American Academy of General Practice, published in Kansas City, Missouri. Doctor Greene will serve on the Board for a term of three years, representing the specialty of urology.

* * *

The Hibbing General Hospital conducted a seminar recently with **Doctor Owen Wangensteen**, internationally known surgeon from the University of Minnesota presiding. Previous speakers at seminars have included such leaders as **Doctor J. McKelvey**, Professor of Obstetrics and Gynecology at the University; **Doctor John Anderson**, pediatrics, University of Minnesota; **Doctor C. Creevy**, Urology, University of Minnesota; **Doctor Robert Good**, Pediatrics, U. of M.; **Doctor Cecil Watson**, Medicine, U. of M.; and **Doctor Wesley Spink**, medicine, U. of Minnesota.

PHYSICIANS DIARY

The Broadway Clinic in Little Falls has announced the association of **Doctor Donald R. Seifert**, formerly of North St. Paul. Doctor Seifert will be associated with **Doctor C. J. Dillenburg.**

* * *

Four members of the Mayo Foundation have been selected to serve as Foundation representatives to the Senate of the University of Minnesota. They are **Doctor O. T. Clagett, Doctor K. B. Corbin, Doctor Victor Johnson** and **Doctor R. Drew Miller.**

* * *

Doctor Arthur Kerkhof, Minneapolis, was the speaker at the Thirteenth District Nurses' Association Meeting held in Northfield. Doctor Kerkhof spoke on heart surgery. He also noted the Rheumatic Fever program sponsored by the Minnesota State Medical Association, the Minnesota Heart Association, the Minnesota State Pharmaceutical Association and the Minnesota Department of Health.

* * *

The Head of the Department of Medicine at the University of Minnesota is back on campus with the Star Medallion signifying the Order of Merit of Chile. **Doctor Cecil J. Watson** went to Chile to deliver the first Doctor Hector Duci Memorial Lecture in Santiago. Doctor Duci, Chilean physician who died last year, and Doctor Watson were classmates in medical student years. The presentation was made for Doctor Watson's achievements in the field of medical research.

Doctor Francis W. Lynch, St. Paul, has been re-elected a director of the American Cancer Society for its fourth region at the Society's Annual Meeting.

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Dr. Paul M. Ellwood Jr., Minneapolis was a speaker at the fifth Mankato area medical seminar. Doctor Ellwood discussed the neurological evaluation of infants with physicians.

* * *

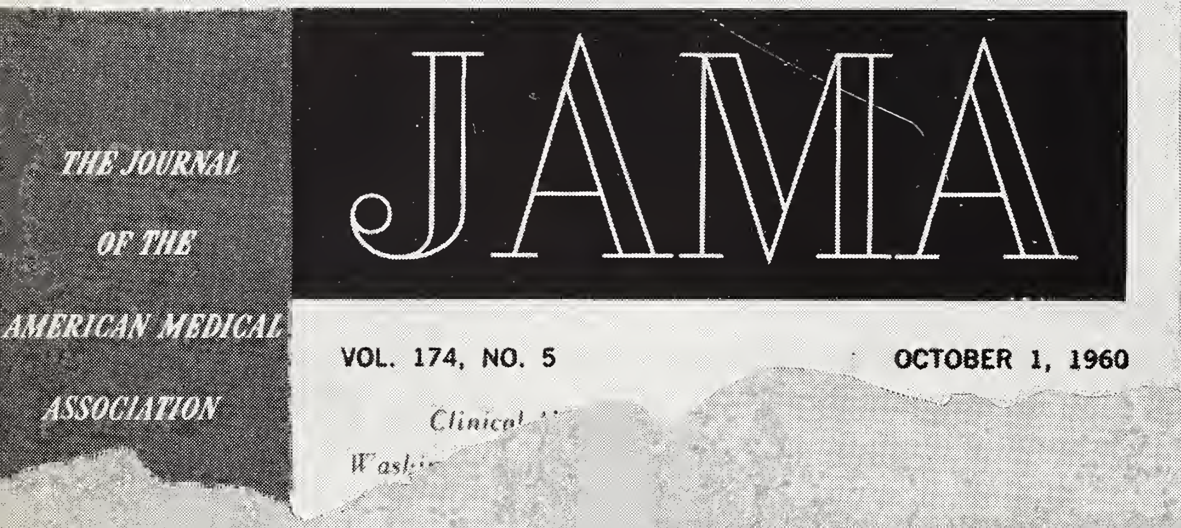
Doctor and **Mrs. D. G. Hanlon**, Rochester, have returned home after an eight-week trip to the Orient. Doctor Hanlon presented a paper at the International Congress of Hematology at Tokyo. They then toured Japan, Hong Kong, Bangkok, Cambodia and Thailand. They stopped at the Hawaiian Islands before returning home.

* * *

Doctor Davitt A. Felder has been re-elected President of the Northern Association for Medical Education. Also elected were **Doctor Ben Sommers**, Vice President; **Doctor Albert Ritt**, Treasurer, and **Doctor Ian Brown**, Secretary.

* * *

Construction of the new office building in Pipestone to be occupied by **Doctor F. E. Boyd** of Jasper has begun. The structure is scheduled to be completed by March 1. Doctor Boyd will continue his practice in Jasper until his new office building in Pipestone is completed. He has practiced in Jasper for three and one-half years.


THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
JAMA
VOL. 174, NO. 5
OCTOBER 1, 1960

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PHYSICIANS DIARY

Doctor E. A. Olson, Pine Island, has been elected President of the Zumbro Valley Medical Society. **Doctor Alvin B. Hayles**, Rochester, was named Vice President with **Doctor Robert E. Fricke**, Rochester, Executive Secretary; and **Doctor E. W. Johnson**, Rochester, Secretary-Treasurer. Named to the Executive Committee, besides the officers, were **Doctors Haddon Carryer, Paul Goethals, C. H. Hodgson, R. J. Jackman, C. H. Slocumb, W. E. Wellman**, all of Rochester; **L. A. Knutson**, Spring Grove and **J. E. Westrup**, Lanesboro. Selected as delegates to the state meeting were: **Doctors Martin A. Adson, A. E. Brown, George Davis, G. R. Diessner, A. B. Hayles, C. H. Hodgson, A. B. Hunt, R. J. Jackman, E. W. Johnson, T. G. Martens, W. E. Wellman**, all of Rochester; **L. A. Knutson**, Spring Grove; **E. A. Olson**, Pine Island; and **J. E. Westrup**, Lanesboro.

* * *

New officers of the Southwestern Minnesota Medical Society are **Doctor B. N. Karleen**, Jackson, President; **Doctor R. K. Minge**, Worthington, President-Elect; **Doctor O. M. Heiberg**, Worthington, Secretary-Treasurer; **Doctor John B. Lohmann**, Pipestone and Doctor Heiberg were named delegates to the State Medical Association.

* * *

Doctor Charles Scheifley, a former consultant in the Mayo Clinic, has opened a private practice of general diagnostic medicine with a special interest in diseases of the heart and circulation in Winnetka, Illinois, with teaching and hospital connections with Northwestern University Medical School in Evanston.

A member of the Mayo Clinic staff reported that seventy per cent of his patients turn out to be people who have no need of pills. The report was given at the Clinic Conference of the California Academy of General Practice. **Doctor E. H. Rynearson** stated that these people are more dissatisfied than the ones who must be told they have cancer, heart trouble or gallstones.

* * *

The new officers of the Minnesota Academy of General Practice are: **Franklin H. Dickson**, M.D., President; **John S. Siegel**, M.D., Vice President; **Robert B. Potter**, M.D., President-Elect; **H. L. Huffington**, M.D., Secretary-Treasurer; **James A. Cosgriff, Jr.**, M.D., Speaker; **David Feigal**, M.D., Vice Speaker; and **John G. Lohmann**, M.D., and **H. E. Drill**, M.D., delegates to the American Academy of General Practice Congress of Delegates.

* * *

Doctor Arnold Lazarow, Minneapolis, has been elected President of the Minnesota Medical Foundation. Also elected to two-year terms of office were **Doctor Corrin H. Hodgson**, Rochester, Vice President and **Doctor John Anderson**, Minneapolis, Secretary-Treasurer. Doctor Lazarow succeeds **Doctor Herman E. Drill**, Hopkins, as President. New trustees installed at the meeting were **Dr. C. D. Creevy, Doctor Arthur C. Kerkhof, Doctor V. J. P. Lundquist**, all of Minneapolis and **Doctor Harold O. Peterson** of St. Paul.

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1. Barclay, P. L.: J.A.M.A. 174:474, Oct. 1, 1960.

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"Nerve Endings in Normal and Pathologic Skin" is the title of a new monograph and atlas written by **Doctor R. K. Winkelmann**, Mayo Clinic. The volume contains 187 pages and forty-two illustrations. It is published by Charles C. Thomas, Springfield, Illinois, publisher of medical books.

* * *

Five Mayo Clinic doctors participated in a joint Annual Meeting of District VI of the American College of Obstetricians and Gynecologists and its Junior Fellow Division in Chicago. The district includes Illinois, Wisconsin, Iowa, Minnesota, North Dakota, South Dakota and Nebraska. The meeting included: **Doctor Kenneth Waddell**, Vice President, of the Junior Division; **Doctor E. Duane Beringer**, who gave a paper on "The Use of Intracavitary Radium for the Treatment of Atypical Uterine Bleeding in the Menopause" and **Doctor Richard E. Symmonds**, who moderated a panel on "Minutiae of Vaginal Surgery." **Doctor John E. Faber**, chairman of the Minnesota Section discussed the therapeutic aspects of "Dysfunctional Uterine Bleeding" and Dr. Symmonds discussed "Prolapse of Uterus, Vagina and Cul-De Sac. **Doctor Robert B. Wilson** moderated a panel on "Normal Infertile Women."

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Two Duluth area physicians have been elected to positions with the Minnesota Division of the American Cancer Society. They are **Doctor Philip F. Eckman**, Duluth, who was named Third Vice President and **Doctor Alvin Sach-Rowitz**, Moose Lake, who was elected to the Board of Directors.

* * *

Doctor Harry F. Burich, Rochester, has been elevated to membership in the American College of Surgeons.

* * *

A motion picture "Achalasia of the Esophagus (Cardiospasm: Diagnosis and Treatment)" by **Doctor F. Henry Ellis, Jr.**, and **Doctor Arthur M. Olsen**, both of the Mayo Clinic, was given an award at the Clinical Congress of the American College of Surgeons.

* * *

The staff of the Weiner Memorial Hospital in Marshall has a new member. He is **Doctor C. A. Rohrer**, a radiologist. Doctor Rohrer came to Marshall from Worthington where he practiced as a radiologist since 1953.

* * *

Doctor Herman Kesting, a St. Paul physician for forty-eight years, received Mechanic Arts High School's (St. Paul) Fifth Distinguished Alumnus Award. Doctor Kesting, valedictorian of the school's class of 1905, was awarded the bronze plaque at an assembly for his "many outstanding contributions to society." He was graduated from the University of Minnesota School of Medicine in 1910, and began practicing in St. Paul in 1912. Doctor Kesting was appointed the first doctor to Riverview Memorial Hospital in 1914 and served as its chief surgeon for twenty years. Doctor Kesting is Vice President and Chairman of the Board of Cherokee State Bank, past president of the Riverview Commercial Club and still practices at 460 South Robert St.

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Contents for

SCIENTIFIC ARTICLES

ORIGINAL CONTRIBUTIONS

Massive Colonic Hemorrhage
Daniel J. Moos, M.D., Minneapolis, Minnesota 41

Long-Term Survival of Carcinoma of the Stomach Following Partial Gastrectomy
Waltman Walters, M. D., Lawrence Tama, M.D.,
Rochester, Minnesota 52

The Nature of the Dumping Syndrome
Raymond C. Read, M. D., Minneapolis, Minnesota 52

Abstracts and Briefs 65

SPECIAL ARTICLES

1960 Income Tax Guide for Physicians

Minnesota Medicine Represents

Duluth Surgical Society
Minneapolis Academy of Medicine
Minneapolis Obstet. and Gynecol. Soc.
Minneapolis Surgical Society
Minnesota Academy of Medicine

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Minnesota Academy of Ophthalmology and Oto-Laryngology
Minn. Society of Clinical Pathology

Medicine

ebruary, 1961

Volume 44
Number 2

MISCELLANEOUS ARTICLES

PRESIDENT'S LETTER 77

EDITORIALS

Trading Ulcer Pain For Dumping Syndrome—Can Be A Poor Bargain
J. Allen Wilson, M. D., St. Paul, Minnesota 79

Roentgen Examination in Massive Gastro—Intestinal Bleeding
Eugene E. Ahern, M. D., Minneapolis, Minnesota 80

MAJOR A. M. A. CLINICAL MEETING DELEGATES' ACTIONS REVIEWED 82

COMMITTEE REPORT

A Proposed Tuberculosis Control and Treatment Program for Minnesota 84

THE ART OF MEDICINE 87

MINNESOTA BLUE SHIELD A-36

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS A-37

IN MEMORIAM A-39

WOMEN'S AUXILIARY A-40

MEETINGS AND ANNOUNCEMENTS A-41

THE PHYSICIANS DIARY A-47

CLASSIFIED ADVERTISING A-51

Minn. Society of Internal Medicine
Minn. Society of Neurol. & Psych.
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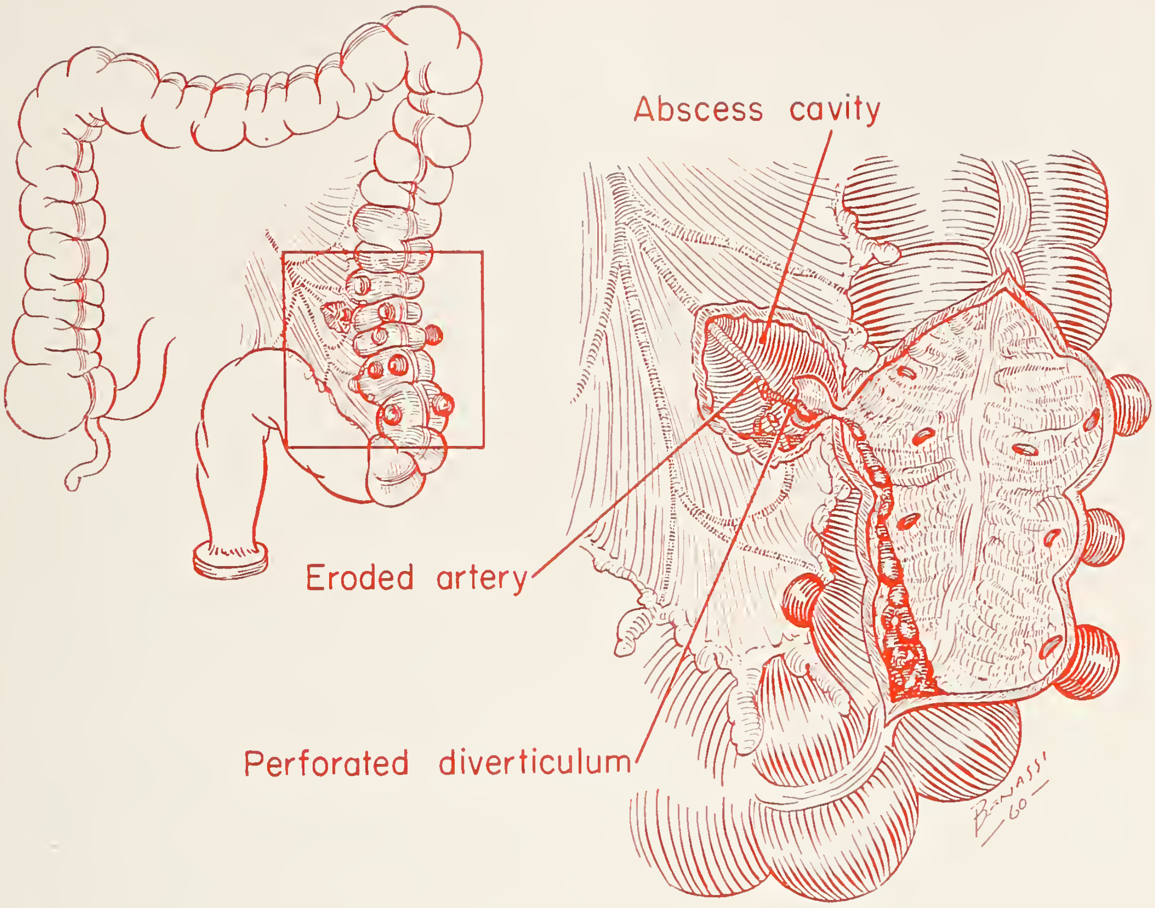

Massive COLONIC HEMORRHAGE

DANIEL L. MOOS, M.D.
Minneapolis, Minnesota

SEVERE hemorrhage from the gastrointestinal tract continues to perplex internists and surgeons alike. This is because its diagnosis is difficult to establish from an anatomical standpoint and the rational course of therapy in a given instance may be hard to determine. If, after a history is taken, a pertinent physical examination is done and a few standardized laboratory and x-ray procedures are carried out, definite information as to the nature and location of the bleeding point is not obtained, the problem often becomes difficult. Even with a definite diagnosis and an accurate quantitation of blood loss, appropriate treatment is hard to standardize. It is the purpose of this communication to point out that the colon which in years gone by has been indicated as a source of hemorrhage in somewhat sporadic fashion must be seriously considered when one evaluates the patient who passes blood from the rectum. The validity of this statement can be amply substantiated by the reports of Noer[1]

From the Surgical Service, Northwestern Hospital, Minneapolis, Minnesota. Presented before the Minnesota Academy of Medicine, St. Paul, Minnesota, April 13, 1960.

and many others[2-16] in past and recent literature. It has been well documented by these individuals that a common lesion in the colon which has a potentiality for bleeding is the diverticulum with or without the presence of attendant inflammatory change. As a matter of fact some individuals even state that hemorrhage is more likely in the absence of diverticulitis.[17] While proof is lacking it has also been pointed out that the colon extensively studded with diverticula from pelvic colon to cecum is more frequently associated with severe persistent hemorrhage.[18] Also of interest is the frequency with which malignant colonic lesions bleed in small amount and the rarity with which they are associated with massive hemorrhage.

It is probable that the incidence of massive colonic diverticular hemorrhage varies in different reports because of the nature of the reporting institutions. Mabely[19] at the Mayo Clinic reports an incidence of bleeding in 145 of 1,970 patients with diverticular disease, an incidence of 7.4%. In only one of these was the hemorrhage severe and the sole reason for surgery. Hoar[5] at the Peter Bent Brigham Hospital reports an incidence of rectal bleeding in 36% of 111 cases of diverticulitis and in 16% of 236 cases of diverticulosis. In 4 of these cases the hemorrhage was massive with death ensuing in 3. In Earley's[18] series of 486 patients with colonic diverticulosis 4.5% bled massively. Quinn and Ochsner [6] studied 76 cases suffering from complications of diverticular disease. Forty eight percent of these were admitted primarily because of hemorrhage and 62% were considered to be massive. Knight[8] examined two series of cases the first consisting of 185 individuals with proven diverticular disease (diverticulitis or diverticulosis) in which 23 (24%) had a history of gross blood in their stools. In his second series of 104 patients from another hospital the incidence of bleeding was 31.7% (33 cases). It is probable that the incidence of hemorrhage in diverticular disease will vary greatly with medico-geographical routes of patient flow and selection. The importance of considering the foregoing factors seems to rest in recognition of the fact that diverticular disease in the colon may be the source of hemorrhage which at times is life endangering and even though one or more institutions find it to be a rare complication we should not approach the subject with closed minds and dismiss it from our thoughts.

Diverticular disease is found largely in older individuals. The geriatric nature of much medical and surgical practice is well known and substantiated by many recent computations of overall age group percentages in this country. It is probable therefore that colonic hemorrhage from diverticular disease will increase in frequency and that it deserves inclusion in the diagnostic possibilities existing in a patient with hemorrhage from the gastrointestinal tract.

During the past seven years 6 cases of this nature have come to the attention of the author. It should be realized that these individuals were admitted primarily to a medical service where non operative treatment with blood transfusions, rest and indicated medication is ordinarily utilized. Only one case (No. 4) was under direct surgical control from the onset. These cases therefore represent a highly selected group characterized chiefly by persistent hemorrhage. They are not presented to imply that all individuals who pass red blood from the rectum should be immediately operated upon. From the duration of their bleeding, hemoglobin/hematocrit levels and the volume of blood replacement necessary one seems justified in stating that their hemorrhages were properly classified as massive. After observation of this small group of patients it is thought that recognition of persistent hemorrhage can and should be made at an early date at which time surgical intervention is more likely to be tolerated. We are faced with the same dilemma as that presented by gastric hemorrhage. We are endeavoring to identify the group of individuals in whom surgical resection of the offending organs or ligature of the bleeding vessel is going to be necessary in order to save life. We know that at one end of the scale there are minor degrees of hemorrhage which require little or no treatment. On the other hand we are faced with people who have been bleeding massively for many days which no treatment, medical or surgical, can save. Somewhere between these two extremes are patients who need mechanical control of the hemorrhagic problem before they have deteriorated to such an extent that it would be a useless gesture.

The following six cases will demonstrate some of the diagnostic and therapeutic points germane to the problem of hemorrhage from the colon.

CASE REPORTS

Case No. 1: This 62 year old lady was admitted to the hospital on November 11, 1953. At the time of admission she stated that she had suddenly passed several large bloody stools which were red in color. After the fourth stool she fainted and fell to the floor. Recovery from the attack of syncope was prompt and she was brought to the hospital. Her past history was essentially negative.

Physical examination at the time of admission was as follows: The patient was a pale woman of middle age who was conscious and well orientated. The blood pressure was 160/90. Arcus senilis was prominent and the pupils were small. Fundoscopic examination demonstrated the presence of moderately severe arteriosclerotic retinal changes. Heart and lungs were normal. The arteries at the wrist were firm and tortuous. The pedal pulses were not palpable. The abdomen was slightly distended. The liver was not enlarged and no other organs or masses were felt in the abdomen. A moderate degree of tenderness was present in the left lower quadrant. Red blood was found during the digital rectal examination. Proctoscopy was carried out to 25 centimeters. No lesions in the colon were demonstrated. Copious amounts of red blood were present and when cleared from the lower colon with suction seemed to be coming from above the 25 centimeter level. The hemoglobin upon admission to the hospital was 4.9 grams with a hematocrit of 21 percent. The bromsulphalein test indicated retention of 4 percent. The Ivy bleeding time was 6.5 minutes.

A Levine tube was passed into the stomach. Aspiration of the gastric content revealed no evidence of blood. An immediate blood transfusion was started and was continued because the patient continued to bleed intermittently, having from 0 to 5 moderately large, red, bloody stools every 24 hours. During the next two weeks 23 transfusions were given. At that time it appeared obvious that the bleeding was not going to stop. Barium enema examination of the colon demonstrated the presence of diverticula and spasm in the sigmoid area. Surgical consultation was requested and with a presumptive diagnosis of colonic hemorrhage, probably on the basis of diverticulitis, the abdomen was explored.

The colon was found to be filled with blood. In the sigmoid area numerous diverticula were seen. In the mesosigmoid an inflammatory mass approximately two inches in diameter was found. The remainder of the colon was negative. Examination of the small bowel showed no evidence of pathology. The duodenum and body of the stomach were examined and no lesions were demonstrable in these areas. Accordingly it was assumed that the hemorrhage was secondary to the diverticulitis noted in the sigmoid region. The sigmoid colon was resected and continuity re-established by end to end anastomosis.

A perforated diverticulum on the mesenteric aspect of the colon which communicated with an abscess cavity in the mesocolon was found on pathological examination of the excised specimen. In the wall of the abscess cavity an eroded artery was present containing a thrombus at its open end. The cavity was filled with fresh blood and communicated with the colon. It was apparent that this was the source of the hemorrhage (see figure 1).

The patient's post operative course was normal. No further bleeding occurred during the convalescent period.

One and one-half years later the patient again presented herself with the complaint of weakness and occasional red blood in the stool. She stated that no bleeding was noted during the intervening period of time (one and one-half years). Since then occasional small amounts of blood were passed from the rectum associated with a gradual diminution in hemoglobin requiring blood transfusion 4 to 5 times a year. Barium enema examination revealed the presence of additional diverticula in the descending and transverse colon. Arteriosclerotic changes have become severe since her operation and this fact combined with the relatively mild bleeding problem seemed to contra-indicate further operative procedure.

Comment: The length of time which this patient bled prior to surgery is somewhat remarkable. A definite lesion was found at the time of surgery and the point of bleeding was demonstrated on examination of the resected specimen. Immediate control of the hemorrhagic problem was excellent, yet one and one-half years later mild recurrent bleeding developed. Barium enema done then under more favorable conditions indicated the presence of additional diverticula. In retrospect one wonders whether or not a more extensive resection of the colon at the time of the initial surgery would have been effective for a permanent solution of the problem.

Case No. 2: A 73 year old female was admitted to the hospital on May 25, 1959. She stated that on the morning of that day she had passed a large red bloody stool. Several similar stools of smaller amount were noted thereafter and for this reason she was admitted to the hospital. Her past history was contributory in that for the previous three years continuous massive steroid therapy had been carried out for the treatment of severe generalized arthritic changes. Several attempts had been made by her internist to discontinue cortisone without success. At the onset of steroid therapy an episode of melena occurred at which time a duodenal ulcer was demonstrated roentgenographically. A single tarry stool was said to have been present. The patient presented for physical examination on the day of admission as an elderly woman appearing pale and listless. Her blood pressure was 138/90 mm Hg. Her pulse rate was 110 per minute. Physical examination of the heart and lungs was not remarkable. Electrocardiographic examination indicated the presence of rather extensive chronic ischemic myocardial changes. The liver was not palpable. No other organs or masses were demonstrable in the abdomen. The patient was definitely tender in the left lower quadrant and some muscle rigidity was found there. On rectal examination red blood was seen on the examining finger. Proctoscopy to 25 centimeters showed only the presence of large amounts of red blood in the colon. A tube was passed into the stomach; no blood was obtained upon continuous aspiration.

The hemoglobin upon admission to the hospital was 11.7 gms. percent with an hematocrit of 33.5 percent. The Ivy bleeding time was 7 minutes. The Lee-White clotting time was 12 minutes. The blood urea-nitrogen was 18 milligrams percent. Roentgenographic examination of the barium-filled colon showed the presence of diverticulosis of the sigmoid region with an area of spasm indicating the presence of inflammatory change (fig. 2). The ascending and transverse colon were not filled with the barium. The patient continued to pass a red bloody stool every one-half to two hours during the next 24 hour period. Continuous blood transfusions were administered. It was noted that the hemoglobin never fell below 8.5 grams and that the lowest hematocrit reading was 27 percent.

Because the patient was passing red blood almost continuously per rectum, an operation was necessary. A pre-operative diagnosis of diverticulitis of the sigmoid colon with hemorrhage from that area was made and the abdomen opened. Examination of the stomach, duodenum and small bowel did not show the presence of blood in the lumen of these structures. A moderate amount of scarring was seen in the region of the pylorus. The entire colon was filled with blood and the lower portion (last 6 inches) of the terminal ileum also appeared to contain similar material. A diverticulum of the sigmoid colon had perforated into and was adherent to the broad ligament. In that structure numerous large dilated veins were seen. The area of diverticular perforation was dissected free accompanied by copious bleeding from these vessels which was controlled by suture. It seemed reasonable to assume that this was the source of the patient's hemorrhage; accordingly the sigmoid colon and a portion of the descending colon were resected. An end to end anastomosis was carried out in order to restore the continuity of the colon. The patient tolerated the operative procedure well and was returned to the recovery room. Several hours after surgery she again started to pass large amounts of red blood from the rectum. Fourteen hours after the initial operation the abdomen was reopened. The colon was found to be filled with fresh blood. Subtotal colectomy was performed leaving the lower portion of the pelvic colon just above the rectum. This segment was opened and aspirated. It was observed for twenty minutes during which time there was no evidence of hemorrhage. The ileum was then anastomosed to the lower pelvic colon. The patient again tolerated the operative procedure well. On the fourth post-operative day signs of severe intra-abdominal sepsis developed associated with dehiscence of the abdominal wound. The patient expired on the eighth post operative day with a generalized peritonitis.

Examination of the resected colon revealed the presence of diverticula and diverticulitis with perforation in the sigmoid colon. Two mucosal rents approximately 1¾ inches long were present in the ascending colon. It was the opinion of the pathologist that these were ante mortem. At autopsy a duodenal ulcer was found which presented no evidence of recent vascular erosion. No blood was found anywhere in the gastrointestinal tract.

Comment: In this instance even though excellent evidence existed at the initial operation to explain the cause of the hemorrhage such proved not to be the case. Perhaps if at the time of the first resection the proximal colon had been opened and completely cleared of blood, bleeding from this segment would have been identified and further resection carried out. The operator was naturally loathe to do this in the face of a colon presenting the seemingly good evidence of a perforated diverticulum in the sigmoid region. Again, however one is forced to the con-

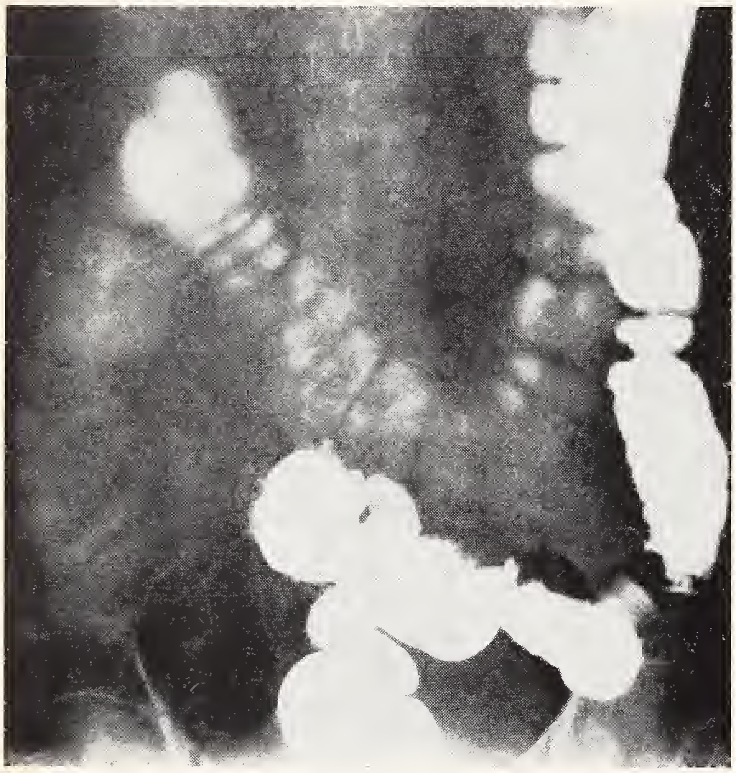

Figure 2A

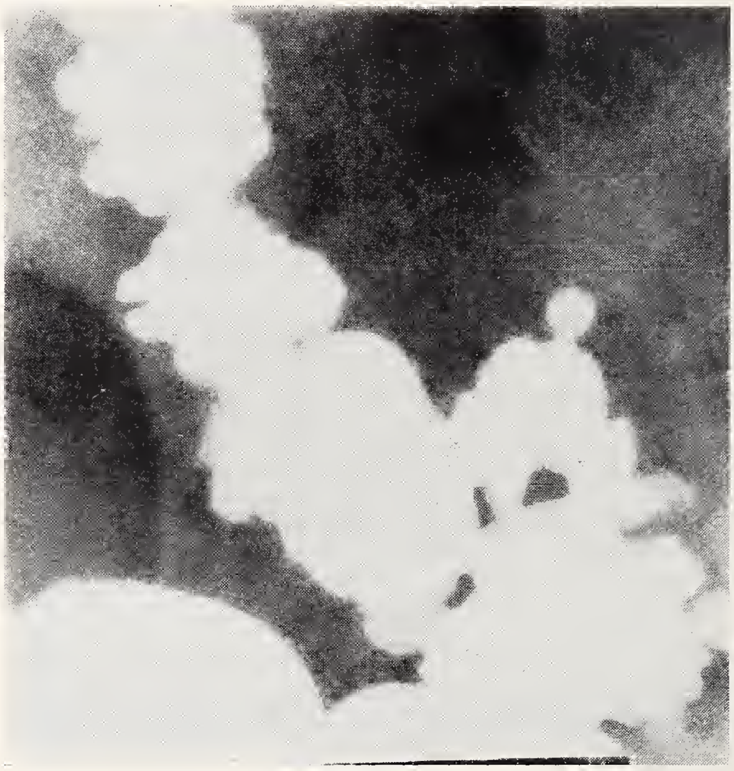

Figure 2B

clusion that in cases of this nature in which surgery is necessary extensive subtotal colectomy should be seriously considered. No explanation of the mucosal rents described in the colon could be given and their relation to the bleeding was indeterminate. It is important to note that extensive subtotal colectomy abruptly stopped the hemorrhage.

Case No. 3: An 83 year old woman was admitted to the hospital on January 6, 1959. At the time of admission she stated that generalized abdominal cramps followed by fainting and a large bloody stool had occurred the morning of that day. The past history indicated that she had suffered periodically for many years from vague epigastric distress.

Physical examination on admission revealed an elderly woman who appeared slightly confused and pale. Her blood was 180/90 mm Hg. There was moderately severe evidence of arteriosclerosis as evidenced by tortuous radial arteries. A rather marked arcus senilis was present. No intra-abdominal organs were palpable and no masses were noted there. No tenderness was found. The abdomen appeared to be slightly distended. On rectal examination dark red blood was noted. Proctoscopy was not done. Her hemoglobin level upon admission to the hospital was 6.5 grams with a hematocrit of 26 percent. A tube was passed into the stomach and dark material obtained which was thought to contain blood; however the benzidine test failed to confirm this. Transfusions were started and were carried out intermittently over the next seven days. The patient continued to pass tarry and dark red stools during that period, sometimes as frequently as 6 every 24 hours and again 24 hours would go by with no passage of stool. At the end of the week it was obvious that the bleeding was continuous. Therefore the patient's abdomen was surgically explored. In view of the past history of epigastric distress and the recovery of some dark material from the stomach that area was examined carefully. The stomach, duodenum and small bowel showed no evidence of pathology. No blood was found in any of these structures. However the entire colon was filled with blood. Accordingly the lower abdomen was opened and diverticula were demonstrated in the sigmoid and descending colon. No other pathology was present in the colon. On the basis of the diverticula being the only pathological change found it was decided to resect that portion of the colon. This was done and the proximal and distal segments were exteriorized. The patient tolerated the operative procedure reasonably well.

Pathological examination of the excised colon showed the presence of multiple diverticula. There was no evidence of diverticulitis or other pathology. Post operatively she continued to bleed from the proximal colonic segment. Re-exploration was considered; however she rapidly developed a severe tracheitis and expired on the fourth post operative day.

Examination at autopsy failed to demonstrate the source of the hemorrhage. Numerous diverticula were present in the descending colon. The colon was filled with blood. No blood was noted in the stomach, duodenum or small bowel.

Comment: Again we were faced with the problem of deciding where in the lower intestinal tract this hemorrhage originated. The lesser procedure of sigmoid resection and exteriorization was carried out, which failed to control the hemorrhage. In retrospect subtotal colectomy would have been the proper procedure for control of the bleeding. Once more it should be noted that we were dealing with an elderly individual in whom the changes of arteriosclerosis were marked.

Case No. 4: An 81 year old man was admitted to the hospital on January 16, 1959. He stated that 48 hours prior to admission a dark red bloody bowel movement which was very loose had occurred. The following day he had a small brown stool with no evidence of blood. On the morning of admission to the hospital three large dark red stools consisting entirely of blood were passed. For this reason he was admitted to the hospital. His past history relative to the gastrointestinal tract was normal. He stated that he had always had a good appetite and had never experienced any difficulty with his stomach or bowel.

Physical examination indicated that the patient was an elderly man who presented no remarkable change in general appearance. His blood pressure was 200/100 mm. Hg. His pulse rate was 68 per minute on admission. Examination of the heart and lungs was normal. Examination of the abdomen showed an obese, pendulous abdomen. No tenderness was noted anywhere. No organs or masses were palpable. Rectal examination showed dark red blood on the examining finger. Proctoscopy to 25 centimeters was carried out; no pathological changes were noted in the colon. A large amount of dark red blood was seen coming from above this level. The hemoglobin level on admission was 10.5 grams with a hematocrit of 30. The Ivy bleeding time was 4 minutes and and the clotting time was 6 minutes. Barium enema examination revealed many diverticula throughout the entire colon (Fig. 3). Four bloody stools of large quantity consisting of dark red blood occurred after admission to the hospital and three on the morning following admission. Since the bleeding was persistent and the patient was elderly and arteriosclerotic with multiple diverticula, a decision to do surgery to obviate the development of a chronic hemorrhagic state was made. When the abdomen was opened it was seen that the colon was studded with diverticula and grossly filled with blood. The small bowel contained no blood and neither did the stomach or duodenum. It could not be determined where the source of bleeding might be in the colon. Accordingly a subtotal colectomy was considered necessary. The terminal 2 inches of ileum and the entire colon to a point just above the rectum was resected. The ileum was anastomosed to the remainder of the pelvic colon.

The patient's post operative course was normal. No further bleeding occurred. He was discharged from the hospital on February 10, 1959 and has remained in good health since with no evidence of further hemorrhage. Subsequently 2 to 3 soft formed bowel movements a day are passed with no discomfort.

Comment: Following some unpleasant experiences with people who had been bleeding from the colon over long periods of time it was thought that this 81 year old arterio-

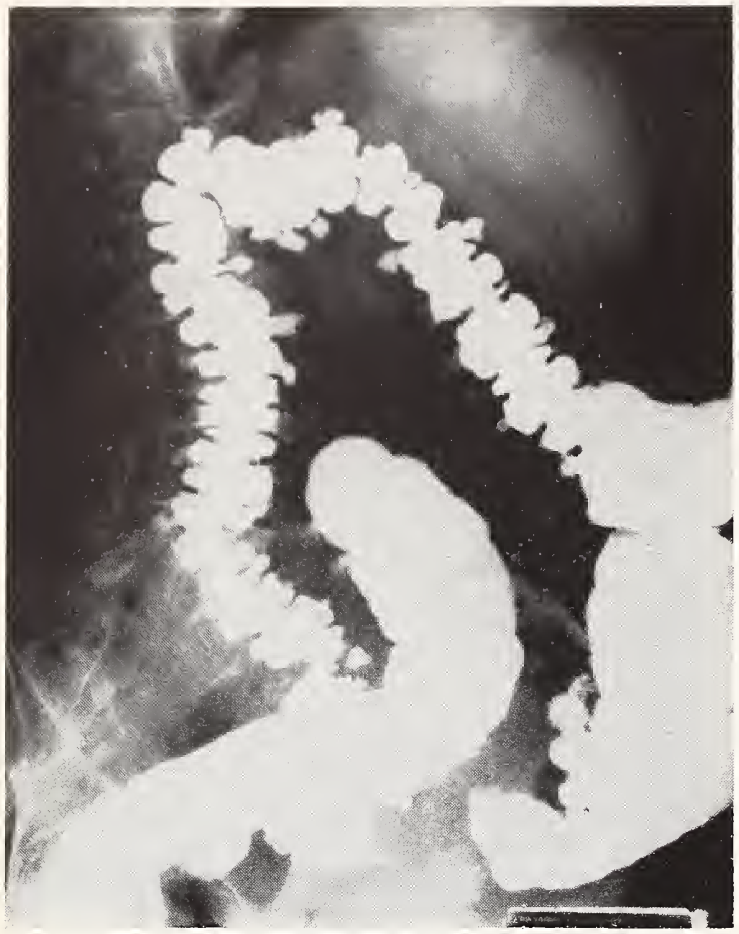

Figure 3A

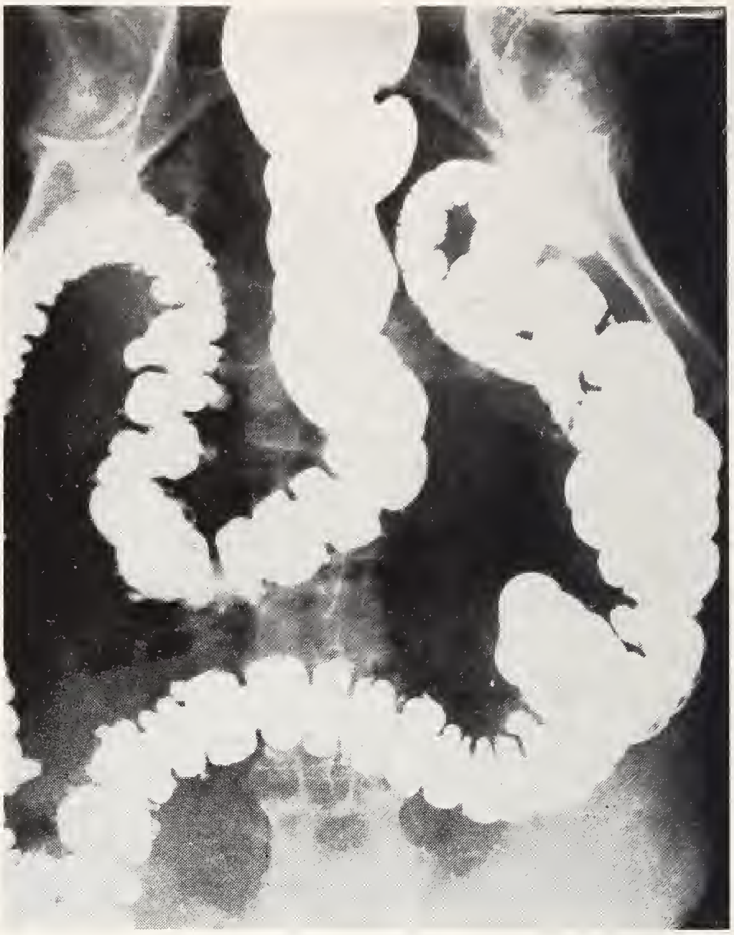

Figure 3B

sclerotic individual who presented a colon studded with diverticula from the pelvic colon to the cecum should be treated surgically before an irretrievable state developed. His post operative course was similar to that of any elective colectomy and the bleeding process was stopped permanently and abruptly.

Case No. 5: An 81 year old man was admitted to the hospital on May 1, 1958. Pain in the left lower quadrant of the abdomen associated with left lobar pneumonia was present. His past history indicated a questionable duodenal ulcer many years ago.

Physical examination on admission showed the presence of a left lower lobar pneumonia and tenderness in the left lower quadrant of the abdomen. Moderately severe arteriosclerosis evidenced by goose neck arteries at the wrist, absent peripheral pulses in the feet together with arteriosclerotic heart disease was present. Arcus senilis was prominent. Four days after admission the patient passed a large red bloody stool. During the next five days similar stools were passed with a frequency of 5 to 6 every 24 hours. No blood was obtained from the stomach by aspiration. On two occasions the systolic blood pressure fell below 100 millimeters of mercury. Thirteen transfusions were given during this period of time. The hemoglobin level varied from 8 to 9.5 grams with a hematocrit of 22 to 26% during this 5 day period. The Ivy bleeding time was 6 minutes and the clotting time was 8 minutes.

X-ray examination of the stomach done under somewhat difficult circumstances revealed equivocal evidence of old inflammatory change in the duodenum. Roentgenographic examination of the barium filled colon showed the presence of diverticula in the sigmoid area.

After five days of bleeding which failed to stop with conservative therapy the patient was surgically explored. In view of the past history of duodenal ulcer a separate incision was made in the epigastrium. Examination of the stomach and duodenum revealed no evidence of pathological change in those organs. No blood was seen in the stomach or small bowel. The colon was filled with blood. Accordingly the lower abdomen was opened and the colon examined. Many diverticula were noted in the sigmoid region. No other pathological change in the colon was found. The lower descending and sigmoid colon were resected and the proximal and distal segments exteriorized as a double barreled colostomy.

Many diverticula were found on examination of the resected segment and that portion of the colon was filled with blood. Post operatively the patient's course was marred by atelectasis with patchy pneumonic changes on the left side. There was no evidence of further bleeding and he was discharged from the hospital with a well functioning colostomy on May 27, 1958 Six weeks later he was readmitted at which time the colostomy was closed. There has been no evidence of recurrent hemorrhage since then.

Comment: In this instance we were again presented with an elderly arteriosclerotic individual who developed lower intestinal bleeding refractory to medical treatment. Resection of the sigmoid colon was followed by cessation of hemorrhage. This was a blind resection in the sense that the only pathological change noted was the presence of diverticula in the sigmoid and descending colon. In this instance, such a procedure apparently controlled the bleeding.

Case No. 6: A 59 year old man was admitted to the hospital on August 21, 1957. The day prior to admission he noted lower abdominal cramps which were followed by 5 moderately large red bloody stools. He became very weak and fainted on the day of admission. His past history was negative in regard to the gastrointestinal tract with the exception of a routine barium enema four years previously which had demonstrated diverticula scattered throughout the entire colon (Fig. 4). Essential hypertension was discovered at the age of 21. The patient had been treated for this problem ever since and at the time of this admission is was the opinion of his internist that advanced hypertensive heart disease existed.

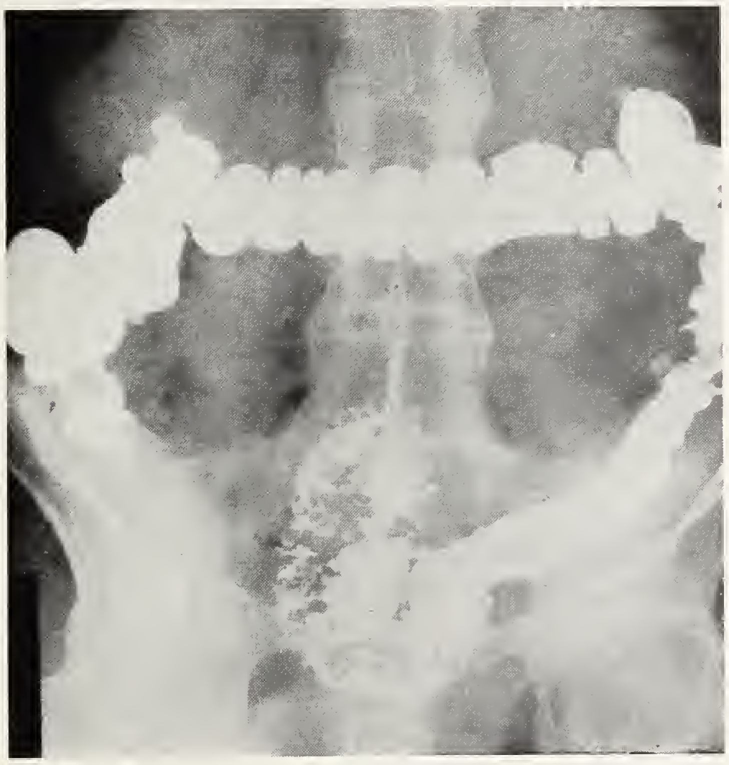

Figure 4

Physical examination revealed a pale man of late middle age whose systolic blood pressure was 200/100 mm Hg. Arcus senilis was present. The radial arteries were firm and hard. The patient looked older than his stated chronological age. The heart was markedly enlarged to the left. Ryhthm was regular and there was no gross evidence of cardiac decompensation. The abdomen was slightly distended. No organs or masses were palpable. No tenderness was noted. The hemoglobin was 9 grams with a hematocrit of 24 percent. Aspiration of the stomach yielded no evidence of blood. Rectal examination showed evidence of blood on the examining finger. Sigmoidtoscopy to 25 centimeters was negative save for the presence of dark red blood coming from the colon above the scope. During the next 6 days the patient continued to bleed, passing red and bright red stools at the rate of 5 to 8 every 24 hours. Twelve transfusions were necessary during this period of time. It became obvious that this hemorrhage was not going to cease spontaneously therefore surgical exploration of the abdomen was carried out. The entire colon was found to be studded with diverticula from the cecum to the lower pelvic colon. The colon was greatly distended and filled with blood. A small amount of blood was present in the extreme terminal portion of the ileum. No evidence of diverticulitis was noted. The small bowel was examined and found to be normal. The stomach and duodenum contained no blood and no evidence of peptic ulcer was found. In view of the fact that multiple diverticula were present throughout the colon subtotal colectomy was considered to be necessary in the absence of a definite lesion identifiable as the source of the hemorrhage. That procedure was carried out to a point just above the rectum. The distal segment was opened and observed for a period of time. No evidence of hemorrhage was seen from it. The terminal ileum was anastomosed to the lower portion of the pelvic colon.

Extensive diverticulosis was found on pathological examination of the resected colon. The lumen was filled with blood. The origin of the hemorrhage could not be identified.

The patient's post operative course was normal. Bleeding stopped abruptly. He was discharged from the hospital on September 7, 1957.

Comment: In this instance the patient was an individual with severe hypertensive heart disease and attendant arteriosclerosis. The necessity for surgical exploration was indicated by continuous passage of red blood from the rectum over a period of 6 days. The presence of a blood filled colon studded with diverticula from the pelvic area to the cecum in the absence of any other demonstrable source of bleeding necessitated subtotal colectomy. After this procedure the bleeding stopped abruptly and prompt recovery occurred. No further hemorrhage has developed to date. It is interesting to note that the patient has 2 or 3 somewhat soft bowel movements daily and experiences no difficulty following the loss of his colon.

DISCUSSION

Diverticular disease of the colon whether it be associated with inflammatory change in one or more diverticula or not must be considered as a causative agent when blood is passed through the rectum.

When an elderly (physiologically speaking) person passes red blood from the rectum in appreciable amounts and there are no noteworthy symptoms or medical history one must suspect that the offending lesion is in the colon. If digital rectal examination plus sigmoidoscopy fails to demonstrate an organic lesion and roentgenograms of the barium filled colon exhibit evidence of diverticulitis or diverticulosis the suspicion begins to assume some degree of reality. Absence of hematemesis without recovery of blood by tube from the stomach with no suggestive history of peptic ulcer or clinical or laboratory findings of liver disease point to colonic diverticula as the source of hemorrhage. If one can demonstrate no alteration in the bleeding or clotting mechanisms and if systemic disease known to affect these is not present further confirmation of the diagnosis is secured. Roentgenological examination of the upper gastrointestinal tract if negative is helpful by further excluding other reasonably common possibilities. Thus we arrive at a clinical diagnosis of this problem. If the bleeding cannot be controlled by non-operative methods and if at laparotomy one finds a colon distended with fresh blood covered with numerous diverticula and one fails to demonstrate blood or an organic lesion anywhere else in the gastrointestinal tract one can hardly doubt the diagnosis. If after resection of the colon all hemorrhage abruptly ceases additional confirmation of the fact that diverticular disease in the colon may cause hemorrhage is secured.

The diagnostic features of colonic hemorrhage due to diverticular disease are then as follows.

1—Passage of red blood per rectum.

2—An aged arteriosclerotic patient.

3—Absence of present or past abdominal symptoms other than recent cramps or left lower quadrant abdominal pain.

4—Negative rectal and sigmoidoscopic examination (save for presence of fresh blood).

5—Absence of hematemesis with no blood in the stomach aspirate.

6—Absence of clinical or laboratory evidence of portal hypertension.

7—Absence of clinical or laboratory evidence of disturbed bleeding or clotting mechanisms.

8—Demonstration of diverticulosis and/or diverticulitis by roentgenographic examination of the colon.

9—Normal roentgenographic examination of the upper gastrointestinal tract.

10—Demonstration at laparotomy of a colon filled with blood presenting a variable degree of diverticulitis and diverticulosis in the absence of other intra-abdominal pathology.

The foregoing description of the classic patient who is bleeding from the colon lacks one important point. Which of these individuals will stop bleeding and which will require operation? The problem is perhaps more difficult in this type of hemorrhage than when one is dealing with gastric hemorrhage. Bleeding from the colon is usually not from a large artery. In the problem case it tends to exsanguinate by steady slow hemorrhage in contradistinction to massive upper gastrointestinal bleeding which often erodes large vessels producing a more acute picture. One can easily keep blood volumes in a satisfactory range over much longer periods of time by slow or intermittent transfusions. Because of this shock is more easily controlled and hematocrit and blood volume studies tend to remain in borderline areas. This engenders new hope in the mind of the doctor and patient from hour to hour or day to day that the hemorrhage will stop and so it does in the majority of instances. Yet, as time goes by the point of no return in individuals who continue to bleed approaches. Having been called upon to attempt to salvage patients near or at this point the author realizing full well the danger of dogmatic operative criteria in this particularly treacherous field proposes the following thoughts for identification of those individuals in whom bleeding will not stop. First, there seems little doubt that the aged person in a physiological not a chronological sense is the one who is most likely to fall into this group. All six of the reported cases here were such individuals. If that individual has a copious discharge of red blood from the rectum and by the diagnostic outline above the likelihood of colonic bleeding is reasonably well established, initial treatment certainly may be non operative. To withhold blood transfusions and allow people with circulatory systems such as these individuals have to go into shock with the idea of thereby arresting hemorrhage seems to be a questionable procedure. If after slow transfusion of two or three pints of blood the individual's condition stabilizes within the first 24 hours and objective signs of bleeding disappear surgery is not necessary. If during this time and extending into the second 24 hours regular (100 to 300 cc) discharges of dark or red blood occur from the rectum with a frequency of one every 3 or 4 hours one must immediately place this patient into the group possibly requiring surgical intervention. It would be well at this time to administer a rapid acting antibiotic for the purpose of decreasing the colonic bacterial flora. Should the hemoglobin and hematocrit remain at marginal levels, let us say 9 grams, with a red cell percentage of 20 to 25 despite additional transfusions of 2 or 3 bottles of blood during this second 24 hours, transfusion should be continued and the patient prepared for immediate surgery. It is believed by the author that almost all of these patients at that time have a good chance of withstanding surgery and being rid of their liability.

Perhaps one might say that this oversimplifies the problem. Yet I know of no other presently known clinical or laboratory features alone or in complicated combination that will aid these basic observations. The sole questions are — does the patient continue to bleed 1000 to 1500 cc or more each 24 hours and is he going to stop? If the answer to the first question is yes and if after the second 24 hours have passed he does continue to bleed, the time has come for serious consideration of surgical intervention. No doubt some of these individuals can continue to bleed for much longer intervals and still recover without operation. It is in this group however that fatalities occur. While no one can state the risk of extensive subtotal colectomy as an emergency procedure for control of hemorrhage there is evidence that it can be done successfully. One must remember that not the least in the factors governing the success of surgical procedures in all problems is the condition in which the patient is presented to the surgeon.

The question of correct operative procedure at the time of laparotomy is a real one. One naturally hesitates to subject any one to an operation of more magnitude than is necessary. On the basis of our experience with these bleeding colons and on the basis of our experience with occasional emperic extensive gastric resection for hemorrhage it is our firm conviction that unless the surgeon can accurately determine the area in the colon which is bleeding an extensive subtotal colectomy should be considered. Subtotal colectomy is here defined as resection of the colon from and including the cecum to a point close to the rectosigmoid juncture. It is probable that this can be carried out in the usual instance without appreciably increasing the operative risk. When one balances this risk against the problem posed by a procedure not successful in controlling the bleeding, the case for subtotal colectomy is a good one. Considering the cases reported in retrospect, immediate subtotal colectomy in Case No. 1 would have probably banished the bleeding problem permanently. In Case No. 2 immediate subtotal colectomy would have avoided the hazard of a secondary subtotal colectomy and may well have been successful in saving the individual's life. In Case No. 3, subtotal colectomy would have controlled the hemorrhage. Whether or not control of that hemorrhage would have prevented the subsequent tracheitis and death may be somewhat debatable. It seems reasonable to believe the patient would have been able to withstand or not have developed the pulmonary complications which occurred had she not been exposed to an additional 4 days of blood loss. It is probable that weakness and inanition subsequent to continued bleeding enhanced the development of this patient's pulmonary problem. It is true that in Case No. 5 resection of an area of colon selected because it was the most likely area of hemorrhage was followed by cessation of bleeding. These factors will always produce conflict in the surgeon's mind at the time that he is called upon for such decisions. The finality of extensive subtotal colectomy in questions of doubt is appealing and the post operative status of such individuals from the standpoint of further bleeding and from the standpoint of future bowel function is a good one. Alternative procedures are at times considered. It is true that transverse colostomy has been reported to be followed by cessation of hemorrhage.[18] However, the value of this as a therapeutic tool seems debatable. It may be of value in determining from which segment hemorrhage is coming with the thought of further subsequent surgical procedures. The method seems cumbersome and time consuming. Ileostomy has similar but more pronounced disadvantages which are self evident.

From a consideration of these factors it can be said that the individual in whom a diagnosis of colonic bleeding is established should if this bleeding continues over a period of 48 hours and is of an extent which requires 1000 to 1500 cc of blood or more during each 24-hour period be subjected to laparotomy and subtotal colectomy of extensive degree unless a localized bleeding point can be accurately demonstrated.

It is disturbing that with the exception of Case No. 1 the exact site of bleeding in these cases was not demonstrable by pathological examination of the excised specimen. I suspect that in the case of a colon which contains several hundred or more diverticula examination grossly and probably by serial section of each diverticulum would be necessary in order to unequivocally state exactly the source of the hemorrhage. Noer[1] has described the abundant blood supply of colonic diverticula in a classic manner. Knight[8] describes bleeding demonstrable from the mouth of a diverticulum which was demonstrated during proctoscopy. Young[14] saw and described an inverted colonic diverticulum which was ulcerated and bleeding actively. The occurrence of ulceration in diverticula which are the site of diverticulitis or on the mucosa of adjacent intestinal wall is reported (Mabely[19]) Stercoral ulceration of the bowel is not unknown so it certainly seems reasonable to assume that fecaliths commonly contained in diverticula may ulcerate the mucosa with erosion of the abundant blood supply in that region thereby giving rise to hemorrhage. Furthermore, if one resects a colon covered with diverticula in a patient who has been bleeding for many days in the absence of any other demonstrable lesion, said colon being filled with blood, and this is followed by abrupt and complete cessation of hemorrhage with recovery of

TABLE I

SURGICAL TREATMENT AND PATHOLOGY

CASE NUMBER	OPERATIVE PROCEDURE	PATHOLOGY DEMONSTRABLE AT SURGERY	CONTROL OF BLEEDING	RESULT	FINAL DIAGNOSIS
1	Resection of lower descending and sigmoid colon, one stage.	Diverticulitis with Mesosigmoid abscess and open artery in cavity.	Immediate control.	1 ½ years later intermittent mild bleeding occurred 2 or 3 times per year. Further surgery contra-indicated severe cerebral arteriosclerosis	Colonic hemorrhage, secondary to diverticulitis.
2	Segmental resection — 14 hours later, subtotal colectomy.	Diverticulitis with perforation into broad ligament.	Not controlled by segmental resection. Controlled by subtotal colectomy.	Death 8th post operative day. Peritonitis.	1) Diverticulitis. 2) Mucosal rents, ascending colon.
3	Resection of sigmoid colon with exteriorization proximal and distal segments.	Exploration of stomach duodenum and small bowel negative. Colon filled with blood. Sigmoid diverticula.	Patient continued to bleed.	Death 4th post operative day. Severe tracheitis.	Diverticulosis, left colon.
4	Subtotal colectomy.	Colon completely covered with diverticula.	No bleeding after surgery.	Recovered.	Diverticulosis of colon with colonic hemorrhage.
5	Resection of sigmoid colon with exteriorization proximal and distal ends.	Diverticula, sigmoid colon. Colon filled with blood. Stomach duodenum and small bowel negative.	Bleeding controlled.	Recovered. Colostomy closed.	Diverticulosis, sigmoid colon with colonic hemorrhage.
6	Subtotal colectomy.	Diverticulosis, entire colon save terminal pelvic portion.	No bleeding following collectomy.	Recovered.	Diverticulosis of colon with massive persistent hemorrhage.

the patient, a parallel is noted with the many cases of empiric gastric resection for bleeding attended by similar results. At times one finds less gross or microscopic evidence to explain the bleeding in such resected stomachs than in the diverticular colon.

SUMMARY

Six cases of hemorrhage arising in the colon are reviewed and presented as a definite clinical entity. Appropriate diagnostic measures will usually reveal the nature of the disease process initiating the blood loss. In certain instances hemorrhage will be massive and continuous. The patient so involved will usually be the subject of rather advanced arteriosclerosis. If this type of bleeding persists as described for more than 48 hours these patients should seriously be considered as candidates for extensive subtotal colectomy. Of paramount importance in the success of this procedure is a reasonably early decision in regard to its necessity. While apparently hopeless problems may sometimes be salvaged such efforts are attended in the main by disappointment.

CONCLUSIONS

1—Massive hemorrhage is occasionally a complication of colonic diverticular disease.

2—Diagnostic factors relative to this problem are presented.

3—Hemorrhage of the nature described which persists for more than 48 hours requiring 1500 cc or more of blood during each 24-hour period and attended by the discharge of red blood from the rectum at 3 to 6 hour intervals should be considered as an indication for extensive subtotal colectomy.

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VOLUNTARY HEALTH INSURANCE AND PRIVATE MEDICAL CARE EXPENDITURES

In 1959 physicians received 31% of their income through insurance arrangements.

The average per capita expenditure for medical care in 1959 was $105.00. Approximately 27% of this represented physicians' services. Approximately 30% represented hospital care.

Sixty-six percent of the population has surgical insurance and 72% have hospital insurance.

Reference: U.S. Dept. of Health, Education and Welfare, Research and Statistics Note 20, 1960.

Long-Term Survival of Carcinoma of the Stomach Following Partial Gastrectomy

The finding at exploration of a large, highly malignant, difficult removable gastric carcinoma with apparent extension to neighboring tissues does not always signify early demise of the patient. Here are three cases of discouragingly extensive gastric carcinoma in which one patient is still well after 23 years and the other two lived for 27 and 41 years, respectively.

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THREE CASES are reported to illustrate the unpredictability of gastric cancer and the occasional long survival that may be achieved with subtotal gastric resection for what appears to be a far-advanced lesion. Although the initial gastric carcinoma in the first two cases had perforated and appeared to involve adjacent organs, one patient (case 1) has survived 23 years without any further difficulty and the other patient (case 2) went 41 years before abdominal carcinomatosis developed. The last patient (case 3) also had a perforating lesion of a high grade of malignancy, and although it did not involve adjacent organs grossly, 27 years elapsed before further difficulty developed.

Report of Cases

Case 1. This patient was first seen at the Mayo Clinic on December 29, 1936, for evaluation of recurring episodes of nausea and vomiting. In the three months prior to his arrival he had lost 43 pounds.

Examination revealed an emaciated and dehydrated patient. The rest of the examination gave negative results except for the finding of a small asymptomatic right inguinal hernia. Routine studies disclosed normal blood and urine. Gastric analysis revealed 132 units of total acid, 22 units of free hydrochloric acid (Topfer's method), and retention of 150 ml. Roentgenograms of the thorax showed normal conditions. Roentgenologic examination of the upper part of the intestinal tract revealed an obstructing lesion at the outlet of the stomach. At surgical exploration on January 2, 1937, an ulcerating mass, about 3.5 cm. in diameter, was found that began just above the pylorus and had perforated onto the pancreas. Gastrectomy was performed with removal of approximately two thirds of the stomach and omentum. The pathologist reported ulcerating adenocarcinoma of grade 3 without lymphatic involvement.

The patient made an uneventful recovery and was dismissed from the hospital on the eighteenth postoperative day. After dismissal he reported frequently through follow-

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up letters. He returned to full-time work as a railroad engineer one month after dismissal from the hospital. He was seen for the second time on September 1, 1947, when he came for evaluation of the right inguinal hernia which had become larger and symptomatic. A roentgenogram of the stomach at this time revealed a normally functioning anastomosis without any evidence of disease. He made an uneventful recovery after repair of the hernia. In his most recent letter dated January 2, 1960, he stated that he was 82 years of age and was still enjoying good health 23 years after the operation on the stomach.

Case 2. This patient was first seen at the clinic on October 21, 1918, for evaluation of epigastric distress associated with episodes of hematemesis and melena. In March, 1915, he had undergone gastroenterostomy at another hospital for these symptoms, and in February, 1918, he had undergone reoperation and closure of a perforated gastric ulcer. However, no record of the location of this ulcer was available.

Examination at the clinic gave negative results except for epigastric tenderness and the scars of the previous operations. Routine studies of the blood revealed a hemoglobin of 46 percent (Dare), and 3,750,000 erythrocytes and 8800 leukocytes per cubic millimeter of blood. Urine was normal. A gastric test meal showed 72 units of total acid and 56 units of free hydrochloric acid. Examination of the stool was negative for blood. Roentgenologic study of the stomach demonstrated a large gastric ulcer and an hourglass deformity.

On October 30, 1918, exploratory operation was performed. A large gastric ulcer had perforated and become adherent to the liver anteriorly and to the pancreas posteriorly. Although dissection was extremely difficult, an anterior Polya resection was performed. The pathologist reported a perforated carcinomatous gastric ulcer measuring 2.5 cm. in diameter. The patient made an uneventful recovery and was dismissed to go home on November 23, 1918.

The patient was seen for the second time 10 years later on March 12, 1928. He had remained in good health and had not sought any medical advice until March 1, 1928. At that time he had had an episode of diffuse abdominal cramps associated with vomiting and diarrhea that had lasted four days. He was hospitalized at another hospital and given an ulcer regimen. Therefore, when he arrived at the clinic he was asymptomatic.

Physical examination gave negative results except for marked pallor. Examination of the blood revealed a concentration of hemoglobin of 42 percent, 4,450,000 erythrocytes and 7400 leukocytes per cubic millimeter of blood, and normal fragility of erythrocytes. Several stool examinations were negative for occult blood. Roentgenograms of the stomach and colon showed nothing of significance. Fractional analysis of gastric contents after a test meal revealed 20 units of total acids and no free hydrochloric acid. The patient was hospitalized and given two transfusions of whole blood after which he was dismissed.

The patient was seen again on July 21, 1959. He had remained well following his second visit to the clinic until February, 1959, when he began having occasional epigastric pain that extended posteriorly and to the lower part of the abdomen. The pain was worse when he was lying down and awoke him frequently at night. Although the pain was aggravated at times by ingestion of food, it was most severe 2 to 3 hours after eating. In April, 1959, he had two episodes of hematemesis and was hospitalized; an ulcer regimen was begun. When he arrived at the clinic the pain had subsided, but he still was vomiting frequently. He had lost 35 pounds in the five months prior to admission.

Physical examination revealed epigastric tenderness and succussion splash. Studies of the blood revealed 14.7 gm. of hemoglobin per 100 ml., and 4,880,000 erythrocytes and 5400 leukocytes per cubic millimeter. Values for eleytrolytes were sodium 136 mEq., potassium 4.0 mEq., chlorides 96 mEq., and carbon dioxide 23 mEq. per liter. Gastric intubation yielded 400 ml. of foul yellow material. Gastric analysis revealed 50 units of total acids and no free hydrochloric acid. Surgical exploration was advised on the basis of history and clinical findings.

At exploration performed three days after arrival (July 24, 1959) the intestines and organs of the upper part of the abdomen were bound together in a large mass of adhesions and cancerous tissue. Multiple carcinomatous implants were found on the parietal and visceral peritoneum. The gallbladder was distended, and a moderate amount of ascites was present. Because o fthe tremendous number of adhesions and the extension of the lesion it seemed best to terminate the operation as an exploratory procedure. The pathologist reported that specimens removed from the liver and mesentery were metastatic mucous adenocarcinoma of grade 3.

The patient was dismissed from the hospital eight days later and died a short time after returning home, approximately 41 years after his initial operations at the clinic.

Case 3. The patient was first seen at the clinic on April 4, 1932, for evaluation of epigastric distress of 2½ years' duration. Roentgenologic examination of the stomach nine months prior to admission had demonstrated a gastric ulcer on the lesser curvature. Medical control of the patient's symptoms had become increasingly difficult, and he was referred to us for surgical consultation.

Physical examination gave negative results. Routine studies revealed normal blood and urine. Gastric analysis yielded 50 units of total acids and 34 units of free hydrochloric acid. Roentgenologic examination of the upper part of the gastrointestinal tract showed a large ulcer on the lesser curvature at the angle of the stomach.

Surgical exploration was performed on April 6, 1932. An ulcerating lesion was encountered on the lesser curvature of the stomach just above the pylorus that was perforating through the serosa. No metastasis was noted. Partial gastrectomy with removal of about two thirds of the stomach and a posterior Polya type of anastomosis was performed. The removed specimen showed ulcerating adenocarcinoma of grade 3 with involvement of the serosa. No lymphatic involvement was found. The patient made an uneventful recovery and was dismissed to go home 25 days after the operation.

Nothing further was heard from the patient until October 17, 1958, at which time he returned for evaluation of recurrent episodes of chills, fever, and abdominal pain of eight weeks' duration. His intermediate history was as follows:

In 1948, he had had what was described by the physician in his home locality as a typical attack of biliary colic. Cholecystograms then showed poor concentration of dye. He had no further difficulty until 1955, when an episode of right renal colic developed. Right nephrotomy was performed with removal of a nonopaque calculus from the upper portion of the right ureter. Essentially the same experience was repeated one year later on the left side, with left nephrotomy and removal of a monopaque calculus from the upper part of the left ureter.

In mid-July, 1958, the patient again had severe left renal colic and was hospitalized, but this condition subsided after three days of conservative treatment. After this, the patient remained in good health until recurring episodes of chills, fever, severe epigastric pain extending to the interscapular area, and nausea with occasional vomiting began eight weeks prior to admission. Dark urine and light-colored stools had been noted intermittently during this time.

Physical examination revealed blood pressure of 160 mm. of mercury systolic and 76 mm. diastolic. Pulse rate was 72 beats per minute, and the pulse was regular. A grade 1, systolic and diastolic murmur at the base and apex of the heart was heard on auscultation. Tenderness in the right upper abdominal quadrant was noted on deep palpation. Routine studies disclosed normal blood and urine. A roentgenogram of the thorax showed cardiac enlargement. The value for urea was 26 mg. per 100 ml. of blood, for fasting blood sugar 86 mg., and for alkaline phosphatase 118 King-Armstrong units. There was no indirect-reacting bilirubin, but there was 1.4 mg. of direct-reacting bilirubin per 100 ml. of serum with grade 3 retention of sulfobromophthalein, thymol turbidity of 1 unit, and a negative cephalin-cholesterol reaction. A cholecystogram failed to show concentration of dye on two separate examinations. A roentgenogram of the abdomen revealed previous resection of the twelfth rib on both sides, gallstones, and calcification of the splenic artery and abdominal aorta. A cardiologist who saw the patient in consultation stated that the patient had chronic rheumatic endocarditis with mild aortic stenosis and insufficiency. Several blood cultures failed to show any bacterial growth after a few days of incubation. The urologic service after careful evaluation decided that there was no urologic problem at this time. Exploration was advised with the preoperative diagnosis of chronic cholecystitis with cholelithiasis.

At operation on October 29, 1958, a malignant growth of the remaining stomach was encountered. A metastatic mass was present in the gastrohepatic omentum over the common bile duct and involved the ampulla. Additional metastatic masses were present in the right lobe and hilus of the liver. The gallbladder was distended and contained multiple stones. Cholecystectomy was performed with difficulty owing to the adjacent metastatic lesions. An accessory hepatic duct about 3 mm. in diameter extended into the gallbladder fossa. One end of a No. 8 T tube was inserted into the accessory duct and the vertical portion of the T tube was brought to the outside. An attempt to anastomose the accessory duct to the stump of the cystic duct and thereby provide internal drainage of bile was unsuccessful because of the small size of these ducts. Therefore, the free horizontal arm of the T tube was occluded with a ligature in the gallbladder fossa, and bile was allowed to flow from the accessory bile duct to the outside. Resection of the liver to remove the metastatic masses did not appear possible because the hilar mass involved the hepatic artery and portal vein.

The pathologist reported that the tissue removed showed chronic cholecystitis with multiple stones and grade 2 adenocarcinoma that had extended into the wall of the gallbladder.

The patient's immediate postoperative course was complicated by auricular fibrillation which was controlled with digoxin. Later left hemiparesis of uncertain cause developed, but was believed related to the cardiac problem. Physical therapy resulted in marked improvement. An inflammation of the right submaxillary gland responded to heat and antibiotics. The T tube was removed on the twenty-fourth postoperative day. Bile expelled through the resultant fistula was collected through a small catheter inserted into the sinus tract and connected to a plastic bag.

The patient recovered gradually and was dismissed to go home on December 4, 1958, 41 days after the operation. The biliary fistula was still present, but drainage was adequately cared for by the arrangement just mentioned. Although the exact date is not stated, the patient died within a year after returning home, approximately 27 years after initial operation at the clinic for carcinoma of the stomach.

Comment

To distinguish by gross inspection alone an extension of a malignant growth from an inflammatory reaction frequently associated with the primary lesion is often impossible. This may have been the situation in case 1 and what appeared to be an extension of the carcinoma onto the pancreas and surrounding tissues could have been only benign inflammatory tissue. Despite the size and high grade of malignancy of the lesion in this case the regional nodes were not involved. The lesion, therefore, may have been localized within the limits of the resection despite the appearance on gross inspection. The possibility of a recurrence, however, must still be anticipated.

To explain the course of events in cases 2 and 3 is even more difficult. That extension of carcinoma into the line of surgical transection or to neighboring organs does not necessarily preclude clinical cure has been noted by different investigators[1-6]. The reasons that may be responsible for the spontaneous regression have been discussed by other workers[7-9]. The additional possibility of a second cancer having arisen in the remaining gastric stump must be considered. Although such occurrences are rare and difficult to prove as such, they have been reported. [10,11]

Whatever the factors responsible for the long survival in these three cases, the decision to proceed with gastric resection despite the gross appearance of fairly well-advanced lesions, as illustrated particularly by cases 1 and 2, is emphasized.

Summary

In the three cases reported the periods of survival following subtotal gastric resection for perforating carcinoma of the stomach were 23, 41, and 27 years. At operation, two of the lesions, those in cases 1 and 2, seemed to have extended into adjacent organs and tissues, and therefore, apparently only partial removal was possible. In the third patient (case 3) there was no apparent extension of the carcinoma to adjacent structures or to regional lymph nodes, yet 27 years later a recurrence developed. The factors that might explain the long survival are briefly discussed.

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WHAT IS YOUR DIAGNOSIS?

The patient is a 65-year-old Norwegian farmer who had enjoyed a lifetime of excellent health until three years ago when he began to develop periphero vascular symptoms in his feet and ankles; mainly a cold sensitivity that required long underwear, wool socks, and furlined shoes for comfort. Within a year amputation of all his toes was done because of gangrene. One year ago he developed an acute heart failure associated with a hemoglobin of 6 grams. All studies including a bone marrow and GI x-rays were normal. His hemoglobin returned to normal with a "shotgun hematinic" and his heart failure was easily controlled with digitalis.

He was now again hospitalized for study because of increasing pain in his feet and ankles. An oscilometric study markedly decreased total circulation in both legs, but all pedal pulses were full and bounding. An arteriogram showed some irregularities but was within normal limits for his age. X-rays of the legs revealed a generalized osteoporosis. A unilateral sympathectomy was done with no benefit. The pain in his feet and ankles continued to the point where he desired an amputation. Scattered areas of his lower extremities gradually broke down with multiple superficial ulcerations, petechiae, purpura, and superficial thrombophlebitis. The skin color of the legs when in dependent position was usually a mottled, deeply blue color, but on bed rest in the hospital the skin color returned to a more normal, pale, waxy hue. The purpuric were usually transitory, but would not blanch on pressure. He was being considered for further amputation in order to obtain relief from pain. The diagnosis was finally substantiated with a laboratory test that could be run in your home with no special equipment.

What is your diagnosis? See Page 81.

The Nature of THE DUMPING SYNDROME

A review of previously proposed concepts with the presentation of a new hypothesis.

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DENECHAU[1] in 1907 and Sir Arthur Hurst[2,3] a few years later were the first to describe patients who, following gastroenterostomy, develop nausea, vomiting and an unpleasant sense of fullness after meals. Symptoms were ascribed on the basis of x-ray studies to rapid passage of food through the stomach with distension of the jejunum. Mix[4] described the same phenomenon in 1922 under the term "dumping" stomach. About this time "symptoms of the small stomach" were being mentioned in the German literature[5] as occurring after partial gastrectomy. These consisted of abdominal tightness, nausea, faintness, palpitations, a sensation of warmth and vomiting. Eusterman and Balfour[6] in 1936 grouped such complaints under dumping. Most surgeons,[7, 8] up until 1945 when Custer, Butt and Waugh[9] reported on the dumping syndrome, considered that postprandial difficulties after operations on the stomach were rare and transitory. If persistent, they were thought to indicate technical failure. Aldersberg and Hammerschlag[10] cleared away considerable confusion[11] in 1947 when they separated the common early postcibal symptoms, since distinguished as the early or just *the* dumping syndrome, from the rarer delayed complaints. It is now accepted[12] that the latter are due to hypoglycemia.

Many papers have been published on this subject since World War II, especially in the American, British and Scandinavian literature. A number of excellent reviews[13-17] are available for the period up until 1953 when Meurling[18] was able to cite over 200 references. These papers show that the symptomatology which arises during or within 30 minutes of a meal had become established. In its full expression it comprises gastrointestinal complaints such as anorexia, nausea, unpleasant sense of fullness, flatulence, colic, diarrhea, regurgitation and bilious vomiting. Vasomotor changes are palpitations with tachycardia, feelings of warmth or cold, flushing or pallor and sweating. Central nervous system affects consist of apathy, drowsiness, vertigo, tinnitus, aphasia, syncope or convulsions. Skeletal impairment includes muscular weakness and cramps. Gooseflesh,

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rhinorrhea, lachrymation, dry mouth, tachypnea, urinary frequency, and atypical abdominal pain have also been observed. Whereas only about 10 percent of gastrectomized individuals are disabled by this disorder, at least 70-80 percent can be shown, by direct questioning, to have developed some of these symptoms. They are generally considered to be inconsequential by the patient because there is no pain, no fear of dangerous complications and no discomfort unless he eats. Distress is transitory and it is soon learned that lying down and taking small frequent meals is a valuable routine. Sugary foods are aggravating while considerable amelioration can be obtained by avoiding liquids, especially milk, at mealtime. Attempts at dietary control may lead, however, to a failure to regain preoperative weight and anemia. Women appear to suffer more than men whereas older people are better off than the young probably because of a lower food intake. The disease is not peculiar to victims of duodenal ulcer as the incidence is the same after treatment of gastric ulcer. The syndrome is seen following surgery for gastric cancer but sufficient data are not available to determine its frequency.

Since the dumping syndrome is almost entirely attributable to surgery there has arisen a fervent desire to prevent or cure the derangement by operative means. Nevertheless, even with all the recent advances and standardization in abdominal procedures the problem still remains. It was the consensus of opinion by 1953 that no real evidence was available to indicate that its incidence could be reduced by the use of different types of vagotomy, gastrojejunostomy, gastrectomy, gastrojejunal valve, or interposed jejunal and colonic reservoirs. Further experience[19-23] would suggest that this conclusion remains true today despite recent promising suggestions and considerable effort in this regard. [24-32] It was originally hoped that symptoms would gradually disappear as the gastrointestinal tract became adjusted to its new arrangement. Unfortunately, careful follow-up studies reveal complaints arising sometimes for the first time after a postoperative interval of months or years and in other cases continuing unchanged for as long as 20 years. The lessening in severity and incidence which has been noticed with time may well reflect the patient's ability to avoid those circumstances which lead to trouble.

Successful treatment of these distressing complaints depends as always upon a satisfactory concept as to their pathogenesis. The large number and diversity of the theories pertaining to the nature of this disorder testify to the obscurity which has surrounded the subject. A succession of hypotheses have been proposed, each being replaced as further information becomes available. Hindsight suggests that there has been a tendency to focus attention on one facet to the exclusion of the whole. Thus, postcibal symptomatology has been attributed to the gastric remnant on account of perigastric adhesions, gastritis, gastroptosis, distension or stretching of the gastric pouch and achylia despite the fact that they occur after total gastrectomy and that baking soda[33] seems to be a more valuable therapeutic agent than hydrochloric acid. General causes such as hypoglycemia, hyperglycemia, anemia, hypokalemia, hypophosphatemia, neuropsychiatric disease, acid base imbalance and allergy appear unlikely as, when these states are encountered in the absence of previous gastric surgery, the clinical appearance rarely resembles that associated with the dumping syndrome. Similarly, repair of these metabolic deficiencies only occasionally relieves specific complaints. It is always possible however that, as some investigators have maintained, multiple factors are involved.

Almost all surgeons now believe that symptoms originate in the small intestine. Biopsy studies do not confirm the proposed role of jejunitis. Afferent loop stasis or reflux cannot be the sole mechanism because enteroanastomosis is not curative and procedures such as Billroth I resection, segmental gastrectomy, and vagotomy with pyloroplasty, in which an afferent loop is not formed continue to evoke characteristic complaints. No real evidence has been brought forward to support the suggestion that incompletely digested carbohydrates are absorbed and lead to toxicity.

A concept which was once widely held infers that food dumped into the duodenum or jejunum stimulates visceral reflexes. Machella[34] gave this idea further impetus in 1949 by pointing out that the bulk of the food becomes increased by osmotic attraction of fluid into the lumen of the gut. This force increases rapidly as the larger molecules are broken down by digestion. The popularity of stretching of the intestine as an explanation for dumping symptoms decreased markedly after radiological investigations with test meal barium mixtures[35] (instead of the usual gastrointestinal series) showed that increased motility and rapid emptying were the rule rather than jejunal dilatation. Machella's contribution[36] was important, nevertheless, because he introduced an experimental technique depending upon the ingestion of either concentrated sugars or hypertonic protein and salt solutions. This method has been used by almost all subsequent investigators. His emphasis on the importance of hyperosmolarity in the genesis of the dumping syndrome has not been seriously contested since. It is a normal function[37, 38] of the stomach to prevent hyperosmotic materials from entering the intestine. If this mechanism is circumvented by intubation of the duodenum,[39] feeding jejunostomy, vagotomy or reduction in size of the gastric reservoir *even with an innervated pylorus,*[23] dumping symptoms may supervene similar to those classically described after drainage operations with or without gastric resection.

The central position of hypertonicity remains in the latest hypothesis which was introduced by Roberts et al.[40] in 1953 and further developed in a later series of papers.[41-44] They suggest that a state of impending shock is produced by depletion of circulating blood volume resulting from loss of fluid into the bowel under the influence of an osmotic gradient. The symptomatology then results from baroceptor activation of the sympathetico-adrenal system. Their ideas are analogous to the jejunal shock theory Hoffman[45] and others[46] attributed to relative hyperemia of the viscera shunting blood away from vital areas. Other workers had previously commented upon signs suggestive of circulatory insufficiency[47] and endogenous adrenaline release.[48]

The blood volume depletion concept proposed by the Columbia School has dominated the field since its introduction and continues to receive wide support.[49-59] It has stimulated quantitative analysis of the dumping syndrome and has thus reduced the earlier dependency upon anamnesis in its identification and treatment. However, serious objections have arisen. The inciting fall in blood pressure is unusual in most investigators' experience. Custer et al. for this reason rejected shock as a causal factor in 1945. They and others[34, 36, 60] report a rise in systemic blood pressure. A classical state of oligemia can be easily produced in man by phlebotomy but it does not evoke the dumping syndrome. Tourniquet shock which has been likened[59] to the vasomotor state seen in dumping produces a cold clammy skin with absent radial pulses different from the warm flushed appearance described as a significant variant in the postprandial condition. Perhaps the main point at issue has been as to whether there is a real correlation between the change in blood volume and the severity of the cardiovascular sequelae. Some investigators[61-63] have recorded only slight and inconsistent changes with little or no distinction between the symptomatic and asymptomatic groups.

Although there is evidence[64] of adrenergic release during the dumping syndrome, circulating adrenaline levels are not elevated.[48] Sympatholytic drugs have not proven helpful and may even exaggerate symptoms.[65] In fact, surprisingly, ephedrine[9, 11] and adrenaline[18] appear more efficacious. It has also been difficult to understand how hyperactivity of the gastrointestinal tract could persist in the presence of the postulated sympathetic impulses which under most circumstances produce complete inhibition. The force of these arguments has recently been recognized by some of the original proponents[66] who now feel that the amount of fluid entering the bowel is inadequate to explain all the findings. In this connection, I found that 1 ml./Kg. of 50 percent glucose gained volume in the rabbit's bowel to a plateau at 4 ml./Kg. rather than increasing linearly with time and extent of intestine to a factor of 7 or 8x,[51] while in the dog Lawrence et al.[66] could record only a doubling in amount. These figures are more in agreement with the slight changes in hematocrit.[40] The concentration of hemoglobin in the blood should reflect to a degree large, rapid losses in circulating plasma volume as is the experience in burns and pancreatitis. Mathews and colleagues[67] have provided evidence that pooling of blood in the vasculature also takes place. This possibility was raised by Hinshaw et al.[68] in 1957 when they discovered increased digital blood flow in this disorder. Renal hyperemia was subsequently described by Morris and his colleagues.[69]

Further evidence[70] for vasodilatation is the consistent increase in pulse pressure induced by eating in dumpers and by hypertonic test meals in patients following but not previous to gastrectomy. Systolic pressure rises and the diastolic falls leaving the mean relatively unaffected. It is difficult to fit such findings into a pattern of sympathetic nervous discharge which would be expected to narrow the pulse pressure on account of restricted run-off, especially as the cardiac output is said to be reduced.[71] A state of peripheral vasodilatation, as opposed to adrenergic vasoconstriction, does explain the increased skin temperatures, feelings of warmth and the flushed appearance commented upon on different occasions.

Some investigators feel that a circulating vasodilator elaborated by the bowel is involved. Both serotonin[72] and histamine[73] have been named but excretion studies regarding the former are conflicting.[74] Significant peripheral serotonin activity has only been found up to the present time in the carcinoid syndrome with liver metastases. Blood platelets are able, apparently, under most other conditions to bind circulating 5-hydroxytryptamine. Similarly, the healthy liver can remove large quantities of histamine[76] from the portal blood. Proteins rather than sugars lead to its production and release from the bowel, the former being relatively ineffective in the production of the dumping syndrome. Intravascular administration of histamine in man routinely results in headache which is rare in the dumping syndrome. This substance causes portal hypertension and, along with serotonin, pulmonary hypertension. Neither of these hemodynamic alterations could be produced in the dog by perfusion of the liver and lung with portal venous blood after instillation of hypertonic solutions into the bowel.[77]

The preceding anlaysis points up the need for a new working hypothesis which will embrace recently acquired knowledge. Experience[77-83] with the physiological, pathological and clinical effects of hypertonic solutions has led to the development of a new concept[84] regarding the nature of the dumping syndrome. This theory although unproven will be presented at this time because it seems to fit the facts. Perhaps it will serve as a guide to further investigation and thus ultimately provide better treatment.

It seems possible that the dumping syndrome represents a reaction to hyperosmolarity itself occurring predominantly in the gut but, after absorption of osmotically active molecules and transfer of fluid into the intestine, secondarily in the blood stream and throughout the body. The idea that sugars per se evoke the gastrointestinal symptoms and hyperactivity has already been voiced by Glazebrook and Welbourne.[35] Intravenously administered hypertonic saline has been known to stimulate intestinal movements since 1908[85] and this phenomenon has been applied to the treatment of ileus.[86] Exposure of the gut to hyperosmolarity by way of its arterial blood supply,[83] or in the case of the isolated intestine by addition to the bathing fluid,[87] similarly elicits hyperperistalsis.

A state of vasodilatation can also be produced by raising the osmolarity of the blood.[88] Increased flow to the brain,[89] heart,[83] kidney,[90] liver,[91] gut,[83] skeletal musculature[92, 93] and skin[94] have all been described with an overall fall in total peripheral resistance independent of the central nervous system.[83] The parenteral administration of concentrated salt solutions[95] and radio-opaque media[96] has been recommended in the treatment of peripheral vascular disease. The intravenous injection of hypertonic sucrose and saline solutions produces electrocardiographic abnormalities in man[97] much the same as those seen in the dumping syndromes and similarly attributed to coronary ischemia[98] although this interpretation now seems doubtful. Concentrated sugar and salt solutions have been used therapeutically for their resuscitative and antiarrhythmic effects[99, 100] on the myocardium.

Signs of central nervous system derangement are common in the dumping sydrome and electroencephalographic abnormalities are described.

Exposure of the brain to hypertonic solutions by either the local, intravenous or arterial routes can result in disruption of the blood brain barrier,[101] release of antidiuretic hormone,[102] oxytocic principle, milk-releasing factor,[103] sympathetic discharge[104] or convulsions.[105, 106] Concentrated saline stimulates pain receptors[107] in visceral vessels and initiates adrenal discharge.[108] Atypical pain and adrenergic release have been described in the dumping syndrome. Hypertonic media evoke muscular weakness and incoordination with fasiculations and spontaneous movements in the isolated extremity of the dog[83] reminiscent of the measured loss in strength and tetanic cramps reported with dumping. Evidence has been obtained which indicates that the action of hypertonic solutions in releasing antidiuretic hormone from the brain,[102] dilating the coronary and peripheral vasculature[83, 101] and inciting peristalsis in the gut[110] is a threshold phenomenon. All responses arise after an increase in extracellular osmolarity of about 5-10 per cent. Changes of this order of magnitude have been measured at the height of the dumping syndrome using a Fiske osmometer,[77] and experimentally as a shift of water out of both the plasma and erythrocytes in the dog.[66]

Preliminary data suggest that hypertonic solutions exert their action in a manner resembling that which would be produced by the local release of acetylcholine in the tissues. The blood pressure changes observed in the dumping syndrome resemble those described by Soma Weiss in his classical work[112] on the effects of intravenously administered acetylcholine and its methyl derivative, mecholyl. These vasoactive materials were shown[113, 114] in volunteers to cause, depending upon dosage, hyperpnea, tachycardia, palpitations, sweating, nausea, vomiting, epigastric discomfort, substernal pain, increased bowel activity, sensations of warmth or cold, and flushing of the head and neck, with a measured increase in skin temperature. These responses lasted over a period of 15-20 minutes. The localization of the skin hyperemia to the blush area has been remarked upon in dumping. The symptomatology of the dumping syndrome is also remarkably similar to that described following the widespread increase in acetylcholine activity brought about by treatment with the powerful anticholinesterase D.F.P.[115] The order of frequency of symptomatology reported with this drug was psychic complaints, nausea, anorexia, abdominal cramps, vomiting, diarrhea, cardiospasm, sweating, palpitations, etc. At the Minneapolis Veterans Administration Hospital our experience has been that in dumping the most common complaints are psychic problems, sweating, nausea, diarrhea, fullness, palpitation, abdominal cramps, substernal pain, vomiting, etc.

When the possibility of hypertonic solutions having acetylcholine-like effects was tested in the dog by comparing the successive rapid injection of 1 ml./Kg. 50 per cent glucose with 4-5 ug./Kg. acetylcholine, the results were practically identical. In the vagotomized animal both types of material induced bradycardia with peripheral vasodilatation. The changes with acetylcholine only were accentuated by physostigmine. Whereas atropinization inhibited the acetylcholine responses it only ameliorated those achieved with hypertonic glucose. A similar result was obtained by Marthe Vogt in 1942[110] in studies on the action of hypertonic sugars and lactate on the gut. She concluded that the concentrated media acted in a manner similar to acetylcholine and the vagus (whose action on the bowel is also unaffected by atropine), and proposed that local release of acetylcholine was involved.

The previously described physiological effects of hyperosmolarity on the brain, gastrointestinal tract and cardiovascular system are all similar to known actions of acetylcholine. Each of these organs contains large amounts of bound acetylcholine.[116] In the case of the bowel much of this is concentrated in the mucosa apart from nerve endings[117] and has been considered the hormone of the gastrointestinal tract.[118] We have recently found that the contracture induced in the denervated extremity of the dog can, like the similar phenomenon seen with acetylcholine,[119] be eliminated by previous curarization. Proof as to the validity of this hypothesis will have to await further experimentation. Experience with identification of acetylcholine-release in cholinergic transmission warns that this may be extremely difficult in the intact animal on account of the ubiquitous nature of the powerful tissue cholinesterases. Preliminary studies in the isolated rabbit's intestine perfused with eserinised Locke's solution do indicate an increase in acetylcholine-like activity in the effluent after intralumenal injection of hypertonic glucose bu tthe best explanation at present is that acetylcholine is not released, the hyperasmotic stimulus simply acts in a cholinergic-like manner.

The preceding speculation leads to several interesting corollaries. First the neuropsychiatric manifestations [120] of the dumping syndrome may have an organic basis in spite of successful psychotherapy.[121, 122] Second, the recurring problem of why some people show symptoms atfer operation while others do not may be explained by considering the dumping syndrome as an exaggerated spectrum of normal physiol ogy. Flushing, tachycardia, electrocardiographic changes (confused with those seen in coronary disease) and other dumping symptomatology have all been reported [123, 124] in some apparently normal people after meals. Minor features of the dumping syndrome can be detected in practically all patients after gastrectomy while blood volume and blood pressure alterations subsequent to eating probably occur to some degree regardless of complaints. Third, anticholinergic therapy should be re-evaluated in combination with dietary measures.[125, 127] An examination of the literature[3, 9, 11, 14, 18, 33, 35, 65, 128-130] reveals that atropine, ganglion-blocking agents, antispasmodics, adrenergic drugs and alkalies have been the least disappointing of the drugs employed and on occasions have given spectacular results. Widespread local cholinergic activity is however difficult to inhibit with drugs despite the small concentrations involved because the site of action is so circumscribed and acetylcholine has both muscarinic and nicotinic actions. The latter include central nervous and ganglionic effects with the release of sympatheticomimetic materials. Finally, the patient may lie down to protect himself against too rapid emptying of the remaining stomach and orthostatic hypotension, but he may also have difficulty exercising his muscles because of a temporary myasthenic state and central nervous system derangement. This conclusion offers yet another reason for the old adage not to bathe or perform strenuous exercise right after a heavy meal, especially if one has previously had an operation on the stomach.

Summary

Salient features in the development of our knowledge regarding the dumping syndrome have been reviewed. The important position occupied by hyperosmolarity in the experimental production of this disorder, as well as in recent ideas concerning its pathogenesis, was pointed out. The evidence on which the prevailing concept of blood volume depletion is based was examined critically. Support was gathered for the suggestion that the essential vasomotor state during symptomatology is one of vasodilatation. It was concluded that existing facts are best explained by assuming that the observed changes in the gastrointestinal tract, brain, cardiovascular system and musculature are evoked by the physiological effects of hyperosmolarity itself. The threshold for this phenomenon is an increase in osmolarity of the order of 5-10 per cent. The action is mediated in a manner resembling the local release of acetylcholine. Therapeutic implications of this new hypothesis have been discussed.

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Abstracts and Briefs

ETIOLOGY OF BILE PERITONITIS

The effects and etiology of bile peritonitis have been studied in dogs. The study was undertaken in order to aid in the clarification of the etiologic factors pertaining to the toxicity of bile peritonitis. The major areas of consideration have been on the toxicity of bile or bile salts, fluid loss or bacterial factors.

The authors produced bile peritonitis by an aseptic surgical technique in unselected dogs wherein the fundus of the gall bladder was sutured open to permit continuous drainage of the bile into the peritoneal cavity. They produced studies on six groups of dogs with variations from the control group involving only the use of antibiotics at varying times in relation to the surgical procedure. The maximum survival of the control group was found to be 37 hours. They arbitrarily selected five days as the basis for survival or non-survival and with this criteria all control animals died. All animals receiving only preoperative antibiotics likewise succumbed. However, the mortality rate was reduced to 20 percent when antibiotics were administered before and after operation with no mortality when antibiotic therapy was limited to the operative and postoperative period.

In 80 instances unsterile bile was found in only two dogs. The authors felt that accumulation of bile ascites was not the only problem since one animal had collected 4800ml.

These studies would seem to indicate at least some percentage of protection by antibiotic therapy. No doubt this will serve as a stimulus to further investigation by other workers.

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Cohn, Isidore, Jr.; Cotlar, Alvin; Atik, M.; Lumpkin, William; Hudson, Thomas L.; and Wernett, George T.: Bile Peritonitis. Annals of Surgery, 152: 827-835, Nov. 1960.

EAR INFECTIONS IN BOTTLE FED BABIES

Dr. Bruce Duncan of Wellington, New Zealand, has conducted an interesting study of chronic recurrent otitis media in infants and the predisposing factors of position while feeding. He states that the supine position of an infant while bottle feeding strongly predisposes toward inflammations of the middle ear. Parenthetically, a similar type of infection is occasionally seen in the elderly, bedfast patient who is fed while in the supine position.

Text books of otolaryngology have long pointed out that milk is commonly found in the mastoid antrum of infants during surgery. Otitis media is extremely uncommon in the breast fed infant. When it does occur in the bottle fed child it is much more common in the infant who is allowed to suck from it while lying either in the supine position or on his side.

Infection, allergy and anatomical variations, long known to play a part in otitis media, of course, still are important. The treatment of acute otitis media with antibiotics and other supportive measures is well known. Special care should be taken in bottle feeding infants who have acute infections or allergies causing nasal blockage, infants showing early signs of otitis media, and in whose siblings have had ear infections during their period of bottle feeding.

Otitis media and mastoiditis remain very real problems in pediatrics, general practice and otolaryngology. The work of Dr. Duncan emphasizes an important point in the prophylaxis of these disorders during infancy.

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Duncan, R. Bruce: Poitional Otitis Media. Archives of Otolaryngology, 72(4), Oct. 1960.

NEUROPATHY IN DIABETES

Of 103 patients with the clinical diagnosis of diabetes mellitus and who are otherwise unselected, evidence of neuropathy was found in 43 patients. Thirty-one of these patients had polyneuritis of varying degrees and 12 patients had mononeuropathy.

In a general way, the polyneuritis was more common among older diabetic patients, among those with more severe diabetes as measured by insulin requirements, and among those who had the disease the longest time. The correlation was not perfect, however, since symptoms of neuropathy may be the presenting complaint of some patients with newly discovered diabetes and neuropathy may not be present in patients with severe poorly controlled diabetes of long duration. The mononeuropathies frequently occur at points where trauma is likely to happen, such as at the elbow, wrist and head of the tibia and may be amendable to specific therapy.

Nerve conduction of all of the patients revealed slowing in most of them and the distribution of mean values was shifted toward the slower side with only a few of the diabetic patients yielding values above the mean of the normal range. This suggests that even among the patients who had no neuropathy some alteration in the nerve function seemed to be present.

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Mulder, D. W.; Lambert, E. H.; Bastron, J. A.; and Sprague, R. G.: The Neuropathies Associated with Diabetes Mellitus: A Clinical and Electromyographic Study of 103 Unselected Diabetic Patients. Presented at the Meeting of the American Academy of Neurology, April 25-30, 1960; submitted to Neurology.

1960 Income Tax

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This article is intended to summarize the most important, and frequently vexatious, income tax problems which commonly arise in the conduct of a medical practice. The author hastens to point out, however, that the contents hereof should not be considered an adequate substitute for the services of professional tax counsel. To begin with, the author has in no sense attempted to exhaust the field of income taxation. Moreover, the law is subject to uncertain application with respect to certain matters discussed herein.

It will be assumed throughout that the taxpayer files his return on a calendar year basis and has been a resident of Minnesota for the full year. Unless the contrary is indicated, statements and conclusions herein are applicable under both federal and Minnesota income tax laws. With the foregoing in mind, the following discussion will have achieved its purpose if it provides the physician with a guide to clearer understanding of his rights and obligations under the 1960 federal and Minnesota income tax laws.

PERSONAL EXEMPTIONS AND DEPENDENTS

Generally, the exemptions and credits allowed taxpayers are set forth and sufficiently explained on the federal and Minnesota income tax returns. Exemptions and credits pertaining to dependents, however, are somewhat more complicated and less obvious. For federal income tax purposes, an exemption of $600 is allowed for each person who is dependent upon the taxpayer, if the following five tests are met:

(1) *Gross income.* Generally, a person may not be claimed as a dependent if he received gross income of $600 or more for the year. The gross income test is inapplicable, however, in the case of a child, stepchild, or legally adopted child who is under 19 or who, regardless of age, is a full-time student during each of five months during the year at an educational institution which maintains a regular faculty and normally has a regularly organized body of students in attendance.

(2) *Support.* The taxpayer must have contributed more than one-half of the support of the dependent, except in a case where there is a "multiple support agreement." Support includes amounts expended for board, lodging, clothing, cost of education, medical and dental care, cost of entertainment, and cost of travel and transportation. It does not include amounts spent to purchase so-called "capital items" other than clothing.

Scholarships. Amounts received by a child, stepchild, or legally adopted child who is a student, as scholarships for study in an educational institution should not be taken into account in determining the total cost of his support. On the other hand, amounts received by veterans for tuition payments and allowances while attending school and appointments to Service Academies are not considered scholarships and should, therefore, be included in the total cost of the dependent's support.

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*Member of Dorsey, Owen, Barber, Marquart & Windhorst.

Specially written for Minnesota doctors, this article highlights both Federal and State income tax laws as they apply to the practice of medicine and the filing of 1960 returns.

Guide for Physicians

Multiple Support Agreement. An exception to the support test is applicable if no one person contributed more than half the support of an individual, but over half of the support of the individual is contributed by two or more persons each of whom, but for the support test, would be entitled to claim the individual as a dependent. In this event, *one* of the persons who furnished over 10% of the support may claim an exemption for the dependent individual. Each person contributing to the support, except the person claiming the exemption, must file a written statement on Form 2120 that he will not claim the individual as a dependent for that year. The statements should be filed with the return of the person claiming the exemption.

(3) *Member of Household.* It is not necessary for allowance of the exemption that the claimed dependent be related to the taxpayer if he is a member of the taxpayer's household and lives with him for the entire year. It should be observed that temporary absences from the taxpayer's home by reason of vacations, school, or sickness will not disqualify him as an exemption if the other tests are met.

It is not necessary that a claimed dependent live with or be a member of the household of the taxpayer if such person is related to the taxpayer in any of the following ways: The father or mother of the taxpayer, or an ancestor of either; a stepfather or stepmother of the taxpayer, a son or daughter of the taxpayer, or a descendant of either; a stepson or stepdaughter of the taxpayer; a brother, sister, stepbrother or stepsister of the taxpayer; a son or daughter of a brother or sister of the taxpayer; a son-in-law, daughter-in-law, father-in-law, mother-in-law, brother-in-law, or sister-in-law of the taxpayer. An exemption for a cousin ordinarily will not be allowed unless the cousin lives with the taxpayer as a member of his household. But a cousin may be claimed as a dependent if for the taxable year the cousin receives institutional care as the result of physical or mental disability, and if he meets all other tests and was a member of the taxpayer's household before receiving the institutional care.

(4) *Citizenship or residence.* With minor exceptions, the dependent must be a citizen or a resident of the United States, Canada, Mexico, the Canal Zone, or of the Republic of Panama.

(5) *Joint Return.* The claimed dependent may not file a joint return with another person, nor may a person be claimed as a dependent if that person is claimed as a dependent on, for example, her husband's return. The dependent may, however, claim the $600 personal exemption on his own return, even though he has been claimed as a dependent.

For Minnesota income tax purposes, a taxpayer is entitled to a "credit" of $14.00 for each claimed dependent. Dependents need not be related to the taxpayer nor live with him. The Minnesota credit for dependents is based solely upon actual financial dependency, not upon legal dependency, age or earnings of the claimed dependent. Accordingly, Minnesota law does not provide a "multiple support" exception.

Unlike the federal income tax law, the Minnesota dependent credit is allowed in full only if chief support is furnished to the dependent for a full taxable year of twelve months, and if the dependent was in existence for the same period. Thus, for example, if a child of the taxpayer was born on July 1, 1960, the taxpayer may claim the full $600 exemption for the child on his federal income tax return, but may claim only one-half of the Minnesota dependent credit, or $7.00, on his Minnesota return.

STANDARD DEDUCTION

A taxpayer may itemize his deductions, and deduct such items as contributions (with limitations), interest, taxes, medical and dental expenses (again, with limitations), certain non-business losses and expenses, casualty losses and thefts. If the total of these deductions is less than 10% of the taxpayer's adjusted gross income, it ordinarily will be to his advantage to claim the standard deduction in lieu of the itemized deduction and to obtain the benefit of non-business deductions without the necessity of itemizing them on his return and, perhaps, of proving that he is entitled to them.

The amount of the standard deduction is the lesser of 10% of adjusted gross income or, for a single person or a married taxpayer filing a joint return with his wife, $1,000. If a married taxpayer and his wife file separate returns, the standard deduction may not exceed $500 on each return. If the taxpayer uses the standard deduction, his wife must also use the standard deduction even though they file separate returns. Accordingly, if the taxpayer itemizes his deductions, his wife must do the same.

If the standard deduction is used and the taxpayer later finds that he should have itemized his deductions, he may do so by filing an amended return. Conversely, if he itemized his deductions, he may file an amended return and use the standard deduction. Under federal law, taxpayers are allowed three years in which to file an amended return; Minnesota law, on the other hand, allows taxpayers two years after the tax was paid or collected, or three and one-half years from the filing of the return, whichever period is the longer. The words "Amended Return" should be plainly written at the top of such returns.

NON-BUSINESS DEDUCTIONS

Contributions

A taxpayer who itemizes his deductions instead of using the standard deduction may deduct gifts to tax-exempt religious, charitable, educational, scientific, or literary organizations, and organizations for the prevention of cruelty to children and animals. Also deductible as contributions are gifts for public purposes to a State, a Territory, a possession of the United States, or a political subdivision of any of the foregoing, or to the United States or the District of Columbia. Under certain circumstances, gifts to cemetery companies, veterans organizations and fraternal lodges may also qualify. But gifts to individuals are not deductible.

The deduction for contributions generally may not exceed 20% of the taxpayer's adjusted gross income for federal income tax purposes, and may not exceed 20% of his net taxable income before credit for contributions for Minnesota income tax purposes. However, under federal law the 20% limitation may be increased to 30% if the additional 10% comprises contributions made to tax-exempt hospitals, to medical research organizations connected with such hospitals, to churches or conventions or associations of churches, or to tax-exempt educational institutions maintaining a regular faculty and curriculum and having a regular student body attending resident classes.

Deductible contributions to a qualified organization may be made in either cash or property, but not in services. The cash gift is the most common form of contribution. If a gift is made by check, a charitable contribution is deductible at the time the check is delivered, if it is thereafter honored and paid. Of course, unpaid pledges are not deductible.

Numerous charitable organizations sell tickets to benefit performances in order to raise funds. It should be borne in mind that the taxpayer may, subject to the above percentage limitations, deduct only the excess portion of the cost of tickets. In other words, if Dr. X paid $15 for a ticket to a benefit performance of "South Pacific" sponsored by the Cancer Society, and if the regular theater price for the ticket is $3.60, Dr. X may deduct only $11.40 as a contribution.

If property is given, the amount of the deduction is the fair market value of the property at the time of the gift, and the donor generally escapes recognition of previously unrealized gain on the property. Thus, taxation on unrealized gain may be avoided in most instances through gifts of appreciated property instead of cash, but there is at least a partial exception. Not infrequently, taxpayers donate appreciated property to a qualified organization upon the condition that the latter will sell the donated property, reinvest the proceeds in such items as state, municipal or United States bonds, the proceeds of which are usually tax-exempt at either the state or federal level, or both, and pay the income therefrom to the donor for life. Prior to 1960, the donor of such property was allowed the charitable deduction, escaped tax on the income received from the organization, and did not recognize gain on the sale of the donated property by the organization. In 1960, however, the Internal Revenue Service issued a ruling which determined that under such circumstances, although the donor was still allowed the charitable deduction and escaped tax on the income received from the organization, the sale of donated property by a qualified organization in accordance with an understanding between the organization and the donor was for tax purposes a sale by the donor. Consequently, the donor must recognize gain on the sale of the donated property in the year of the sale.

Although the value of services contributed by physicians to charitable hospitals and medical research organizations is considerable, the value of such services is not deductible. A contribution deduction may be claimed, however, for any unreimbursed expenses incurred in rendering such services to organizations, gifts of cash or property to which would be deductible. Accordingly, a contribution deduction is allowed for out-of-pocket transportation expenses such as taxi fares, airplane and railroad tickets, and reasonable expenditures for meals and lodging necessarily incurred while away from home in the course of performing donated services.

Contributions that exceed the above-mentioned percentage limitations cannot be deducted as a business expense. However, amounts paid to charitable organizations in payment for specific considerations or privileges, while not deductible as contributions, may be deductible as ordinary and necessary business expenses.

Although political contributions are not deductible under federal law, a taxpayer is allowed to deduct political contributions not in excess of $100 for Minnesota income tax purposes.

Medical and Dental Expenses

For federal income tax purposes, if the taxpayer itemizes his deductions instead of using the standard deduction, his deductions may include medical and dental expenses in excess of 3% of his adjusted gross income. This deduction is allowed for expenses actually paid during the year for the medical care of the taxpayer, his wife and his dependents, not compensated by insurance or otherwise. The amount paid for medicines and drugs may be taken into account as medical expense only to the extent that it exceeds 1% of the taxpayer's adjusted gross income. In computing medical expenses, amounts paid on behalf of a claimed dependent, or a person who could be claimed as a dependent except for the fact that he had income of $600 or more, may be included.

If either the taxpayer or his wife was 65 or over on or before January 1, 1961, the amount deductible under federal law for medical and dental expenses is not restricted to the excess over 3% of adjusted gross income, but the amount spent for medicine and drugs is still limited to the excess over 1% of adjusted gross income. Moreover, the amounts spent by the taxpayer for his dependents' medical expenses are deductible only to the extent that they exceed 3% of his adjusted gross income. The deduction may in no event exceed $2,500 multiplied by the number of exemptions, exclusive of special exemptions for age and blindness. The medical deduction is further limited to $5,000 if the taxpayer is single and not a surviving spouse or the head of a household, or if the taxpayer is married but files a separate return, and to $10,000 if he files a joint return or is a surviving spouse or the head of a household.

For Minnesota income tax purpose, on the other hand, there are neither percentage nor dollar limitations. Valid medical and dental expenses and drugs are deductible in full.

The amounts paid for the diagnosis, cure, mitigation, treatment or prevention of disease or of a physical or mental defect, are medical expenses under federal and Minnesota law. They include payments made for diagnostic, surgical, hospital, nursing, laboratory, dental, X-ray, obstetrical, therapy treatments, and other similar services. Also considered medical expenses are the cost and maintenance of artificial teeth, eyes, and limbs, eyeglasses, surgical appliances, braces and seeing-eye dogs. Medical expenses do not include the amounts paid for permanent structural improvements such as the cost of a swimming pool, or the addition of an elevator or first floor bedroom and bath to a house if such expenditures increase the value of the house. Although medical expenses ordinarily include amounts paid for psychiatric care, amounts paid for personal analysis of medical students which in some instances is a required part of their training do not qualify.

Under federal law, but not for Minnesota income tax purposes, the cost of transportation primarily for and essential to the rendition of medical care is deductible as a medical expense. Thus, the transportation expenses incurred by a taxpayer crippled by arthritis in going to Arizona, for example, or by a parent to accompany a child to obtain medical care or taxi fare, are also deductible. To be deductible, however, transportation expenses must be essential to medical care and not merely incidentally related to it. Food and lodging away from home are probably not deductible as medical expenses unless they are provided as a necessary part of institutional medical treatment.

The cost of membership in either the Blue Cross or the Blue Shield plans, as well as commercial hospitalization insurance premiums may be included in computing medical expenses under federal and Minnesota income tax laws. Commercial medical insurance premiums are deductible as medical expenses for federal income tax purposes, but Minnesota law does not allow a deduction for such expenses unless the taxpayer has received benefits from the policy during the taxable year, and then not in excess of the benefits received or premiums paid, whichever is less. The cost of life insurance or disability insurance which provides for loss of earnings is not a medical expense. Premiums paid for accident and health insurance which does not provide reimbursement to the insured for medical expenses are not deductible. Accordingly, if a taxpayer has, for example, an accident and health policy which combines any of the forementioned types of insurance, tax authorities require that he pro rate the premium in accordance with the above rules. Medical costs recovered during the taxable year through insurance reduce the medical deduction. If received in reimbursement of medical costs deducted in prior years, they constitute taxable income.

Taxes.

Minnesota income taxes paid in 1960 are allowed as a deduction for federal income tax purposes, but are not deductible on the Minnesota return. Federal income taxes paid on 1959 income tax liability, the 1960 estimate, or withheld during 1960 are deductible on the Minnesota return. It should be noted, however, that the fourth quarter federal estimated tax payment, due on or before January 15, 1961, may be taken into account on the federal income tax return whether or not paid during 1960, but may be deducted on the Minnesota returns only if paid during 1960.

Minnesota real estate and gasoline taxes as well as the cost of automobile licenses are deductible on both the federal and the Minnesota returns, but federal club dues taxes, admissions taxes, telephone and telegraph taxes, and the employer's one-half of social security taxes with respect to the wages of domestic employees are allowed as a deduction only on the Minnesota income tax return. However, as will later appear, certain of the foregoing federal taxes are allowed as a deduction on the federal return if incurred and paid by the taxpayer in connection with his professional practice.

If a taxpayer sold his home in 1960, he is, under federal law only, allowed a deduction for real estate taxes properly attributable to the part of the year before the sale, whether or not such taxes were paid. In addition, and again only under federal law, the taxes thus allowed as a deduction must be added to the selling price of the home for purposes of determining gain or loss.

Interest.

Both federal and Minnesota law allow as a deduction interest paid (or accrued if the taxpayer is on the accrual method) within the taxable year. If a taxpayer purchases personal property under a contract which provides that payment of part or all of the purchase price is to be made in installments, and in which carrying charges are separately stated but the interest charge cannot be ascertained, then the payments made during the taxable year under the contract are treated as though they include interest equal to 6% of the average unpaid balance under the contract during the taxable year. The "average unpaid balance" is the sum of the unpaid balance outstanding on the first day of each month beginning during the taxable year, divided by 12. In no event, however, may the interest deduction for the year exceed the carrying charges properly attributable to such year.

Non-Business Bad Debts.

Non-business bad debts are those which are not (1) created or acquired in connection with a trade or business of the taxpayer, (2) incurred in the taxpayer's business, or (3) evidenced by a stock, bond or other security which is a capital asset. If a non-business bad debt becomes *entirely* worthless within the taxable year, the loss is treated as a short-term capital loss. As such, it is deductible first from short-term capital gains, if any; then from net long-term capital gains, if any; then from ordinary income in the maximum amount of $1,000. No deduction is allowed for non-business bad debts which become *partially* worthless during the taxable year.

Other Deductions.

Taxpayers may deduct legal or accounting fees attributable to tax advice and to the preparation of income tax returns. In addition, a deduction is allowed for casualty losses, thefts, and similar losses which are uncompensated by insurance or otherwise. Such expenditures as safety deposit box rental, investors' statistical services, investment periodicals (such as the Wall Street Journal), custodian fees, fees paid to investment advisers, and legal or accounting fees for investment record-keeping are allowable deductions as expenses paid or incurred for the production or collection of income, or for the management, conservation or maintenance of property held for the production of income.

PROFESSIONAL INCOME AND EXPENSE

Generally.

Business or professional income and expense are reported on a separate form—federal Schedule C, and Minnesota Form M-12, both labeled "Schedule of Profit (or Loss) from Business or Profession." Only business expenses are listed as deductions on these forms. Nonbuiness deductions discussed above and allowed by the tax laws should be itemized unless the taxpayer chooses to use the optional standard deduction.

Accounting Method and Professional Income.

When a physician files his first income tax return after he has begun private practice he may elect to report his income either on a cash or an accrual basis. Under the cash basis method, income is taxable only when it is received, and expenses are not deductible until paid. Under the accrual basis method, income is taxable in the year earned, even if uncollected, and expenses are deductible in the year incurred, even if unpaid.

Once an accounting method has been chosen, it may not be changed without the permission of the Commissioner of Internal Revenue. Professional people usually prefer to use the cash basis method and to pay tax on collections rather than billings, as professional fees are not always promptly paid and collections are frequently less than billings. If the accrual basis method is used, bookkeeping adjustments are necessary from time to time to offset accounts receivable which have been included in income but which have proven to be uncollectible.

An advantage of the cash basis method to the physician is that it provides an element of control over net income. If the year promises to be one of unusually high income, he may limit his income to some extent by postponing some of his billings to the following year, paying all bills for expenses before the end of the year, and buying and paying for professional supplies to be consumed the following year.

The cash basis taxpayer will enter only fees actually received. Fees paid by check are the same as those paid in cash and cannot be deferred as income by holding for deposit until the following year. If the check is returned by the bank unpaid, the amount of the check is deducted from the taxpayer's income until such time as it may be paid if previously included in his income.

Occasionally a doctor may accept a note, merchandise, or services in payment of a bill. These are includible in his income at fair market value. If a note has been accepted from a patient and its value included in income, the doctor may deduct the amount previously reported in income as a bad debt loss if the note should become worthless.

Gifts that are given to a doctor by a patient in gratitude for or in recognition of professional services which he has actually rendered are actually income to him.

Professional Expenses—Generally.

Business expenses are the normal current costs of operating a business or professional practice. They are deductible if they are ordinary and necessary expenses directly connected with or related to a business or profession. The term "ordinary" as used in this context refers to an expense which is a common and accepted occurrence within the business or profession. "Necessary" expenses are those expenditures which are appropriate and helpful, even though not absolutely essential. Expenditures for lobbying or the promotion or defeat of legislation, contributions for political campaigns, and payments which frustrate sharply defined public policy cannot be deducted as ordinary and necessary business expenses.

Under the income tax law, a physician in private practice is considered to be the proprietor of a business. He is entitled to deduct from his gross income all the ordinary and necessary expenses of his professional services. These deductions, if claimed, must be supported by itemized records and substantiating evidence, since the burden of proving their validity rests on the taxpayer. Living costs and personal expenses may not be deducted as business expenses. If an expense is both business and non-business or personal, only the portion attributable to the doctor's practice may be deducted as a business expense.

The following is a list of most of the usual business expenses incurred by doctors. To the extent that these expenses are ordinary and necessary in conducting a professional practice, they are deductible on federal Schedule C and Minnesota Form M-12:

Accounting. Fees paid for installing and maintaining an accounting system, bookkeeping, auditing and preparation of tax returns.

Automobile. If an automobile is used in making professional calls, the expense of its operation, including gasoline, oil, greasing, washing and polishing, antifreeze, garage rent, license fees, depreciation, insurance premiums, uncompensated casualty and collision damages, interest on installment purchase, repairs, parking fees, towing charges, bridge and highway tolls. A doctor is not entitled to a business expense deduction for automobile expenses attributable to (1) driving to the office, to a hospital, or to a patient's home directly from his home in the morning, or (2) returning home at the end of the day.

Bad Debts. If a physician is on the cash basis, then as noted above, uncollectible debts are never included in his income. In the case of an accrual-basis taxpayer, however, bad debts may be deducted either as a direct charge-off when they occur, or by setting up a reserve for anticipated bad debts and deducting reasonable additions to that reserve. Thus, the bad debt reserve method permits a deduction even before the debt has become bad Doctors who write off and deduct actual bad debts deduct them in the year the debts became fully worthless. But there is an option covering partially worthless bad debts. Instead of waiting for the debt to become entirely bad, the doctor can deduct the worthless portion in any year in which he writes it off, so long as the debt is not completely worthless. This opinion permits a taxpayer to choose the year for deducting partially worthless bad debts.

Bank Charges. Service charges for maintaining professional bank account.

Casualty Losses. Loss by fire, flood, theft, sudden deterioration, or other casualty of property used in professional practice, if not compensated by insurance.

Collection Fees. Fees paid to collection agencies and attorneys for collecting delinquent professional accounts.

Conventions. Costs incurred in attending conventions directly related to professional practice such as registration fees, meals and lodging, tips, baggage charges, and transportation. The expenses of the taxpayer's wife are not deductible.

Damages. Payment of damage claims or judgments, including litigation expenses, arising out of professional activities.

Depreciation. Annual allowance to recover cost of professional property having a useful life of more than one year and established in accordance with a predetermined, reasonably consistent plan. The aggregate of the amounts allowable each year plus the salvage value remaining, if any, will at the end of the useful life of the property equal its cost. Examples of depreciable property include that portion of an automobile devoted to professional practice, x-ray equipment, office furniture and surgical instruments.

Dues. Doctors may deduct expenses of membership in local, state or national medical professional organizations. Also deductible is a proportionate part of membership costs in belonging to clubs, service organizations, and chambers of commerce, to the extent that membership is for the purpose of increasing professional income. This does not include expenses of a doctor's wife in an auxiliary society, since her membership is not for the direct purpose of enhancing his professional income.

Education. Expenses incurred in attending "refresher" courses of short duration which are intended to keep a practicing doctor abreast of current developments in his area of competence and which do not offer academic credit.

Entertainment. Costs incurred as a means of enhancing a doctor's practice, such as the entertainment of doctors who refer patients, and similar expenditures to attract and retain patients. Records should be maintained showing the dates, places, and events, the names of guests, the amounts expended and the business benefit derived or reasonably expected to be derived.

Flowers. Cost of flowers for the reception room, as well as flowers for patients and funeral wreaths, providing such costs are incurred for a business reason and not in fulfillment of a social or personal obligation.

Gifts. Gifts to employees, hospital attendants, nurses, and patients for business rather than personal reasons. The taxpayer must be prepared to show by detailed records the names of recipients, the amounts expended, and the likelihood of business benefit.

Insurance. Premiums on policies written in connection with professional practice, such as professional liability, public liability, embezzlement, and insurance on professional property are deductible. But this does not include disability or life insurance.

Interest. Interest on indebtedness arising out of professional practice, such as the purchase of equipment or a building used for office is allowed as a deduction.

Laundry. Cost of laundering or renting towels, surgical gowns and linens used in professional practice.

Leasehold improvements. Cost of improving or remodeling a doctor's office may be amortized over the useful life of the improvements or the remaining period of the lease, whichever is shorter.

Legal. Doctors may deduct expenses in connection with earning professional income, such as collecting delinquent accounts or defending a professional liability suit. Costs incurred in connection with an unsuccessful defense of a criminal or license revocation proceeding are not deductible. Also deductible are legal fees paid in connection with tax advice or with the preparation of income tax returns.

Fees. Fees for narcotics and annual doctor's licenses.

Magazines and Books. Cost of professional journals, and magazines and newspapers for the reception room; also the cost of books that have only temporary value (generally a year or less). Does not include reference books having a more or less permanent value and which should be depreciated, as with other capital assets, over their useful life.

Maintenance. Costs such as electricity, gas heating fuel, water, repairs, cleaning, painting and decorating.

Medical Supplies. Drugs, chemicals, dressings, vaccines, and items such as clinical thermometers which have a normal life of not more than one year.

Moving. Costs incurred in transferring a professional practice to a new office location.

Office Supplies. Stationery, printed forms, postage, pens, pencils, and similar items.

Rent. Paid in leasing equipment or office space. If residence is also used as a bona-fide office, the portion of the rental reasonable attributed to office space is deductible.

Repairs. Costs incidental to keeping professional property in an ordinary efficient operating condition, such as fixing broken furniture and equipment and restoring an air conditioning unit to operation.

Residence. Reasonable proration of rental, taxes, mortgage interest, utilities, janitor expenses, various types of insurance, and repairs if office or bona-fide second office is located in doctor's residence.

Salaries. Paid to nurses, technicians, secretaries, and assistants, including employer's payroll taxes. Also proportionate part of wages paid to servant who cleans both office and residence. Includes bona-fide wages paid to a dependent child for services as chauffeur, receptionist, and so forth, but the cost of meals and lodging for the child are not deductible.

Taxes. Personal property and real estate taxes levied on property used in professional practice; occupation taxes or taxes on gross receipts from professional practice; sales and use taxes on purchases of supplies and equipment; and employer's payroll taxes. Minnesota and federal gasoline taxes and federal excise taxes imposed upon a doctor and paid in connection with professional practice, are a deductible expense under federal and Minnesota law as part of the cost of the item.

Telephone. Expenses incurred for office telephone and professional telephone calls made from residence or elsewhere; also telephone answering service.

Travel. Expenses in attending professional meetings and visiting patients, such as transportation, baggage charges, and the cost of meals if "away from home" (overnight trip). Costs of personal or vacation travel are not deductible even though an incidental business purpose may be served. Does not include traveling expenses of a doctor's wife in accompanying him to professional meetings even though she may perform some incidental useful services.

Uniforms. If not suitable for other than professional usage and if necessary for reasons or custom or sanitation.

Depreciation.

The cost of medical equipment, office furniture, buildings, and other property with a useful life of more than one year may not be deducted in full in the year of purchase as an expense. However, if property such as office furniture has a useful life of limited duration which can be determined or estimated, a pro rata portion of the cost may be deducted each year over the estimated useful life of the asset to the taxpayer. The cost of an asset which does not have a limited useful life, such as radium, land or goodwill, may not be recovered by depreciation.

A reasonable allowance may be deducted each year, as depreciation, for the exhaustion, wear and tear, and obsolescence of depreciable property used in business, professional practice, or held for the production of income. In this way, the cost of depreciable property, less the salvage value, may be recovered over the period of its estimated useful life.

Any reasonable method which is consistently applied may be used in computing depreciation, but no asset may be depreciated below a reasonable salvage value under any method. The four methods most generally used are (1) the straight line method, (2) the 150% of straight-line method, (3) the 200% declining balance method, and (4) the sum-of-the-years-digits method.

Straight-line method. Divide the cost of the property, less salvage value, by the years of the expected useful life of the asset to the taxpayer. This amount is deductible each year of the useful life.

150% of the straight-line method. Each year deduct an amount equal to 150% of the applicable straight-line rate times the remaining unrecovered cost of the asset that year. Continue until the unrecovered cost is reduced to the salvage value.

With respect to new tangible property with a useful life of three years or more, a taxpayer may use either of the two methods described above, or any of the following:

200% declining balance. The annual deduction equals twice the applicable straight-line rate times the unrecovered cost. The depreciation must stop when the remaining undepreciated balance is reduced to the salvage value.

Sum-of-the-years-digits method. The annual deduction is the remaining undepreciated cost less salvage value multiplied by a fraction consisting of the year's digit divided by the sum of the digits. Thus, if an X-ray machine has a 10-year useful life, the first year's fraction would be 10/55, the second year's fraction 9/55, and so forth.

The deduction may also be based on any other method, consistently employed, which does not produce a larger aggregate depreciation during the first two-thirds of the asset's useful life to the taxpayer than the 200% declining balance method.

A flat 20% of the cost of used or new tangible personal property (other than buildings) with an estimated useful life of six years or more can be deducted in the year of purchase regardless of how long the asset was held during the year. This special deduction is available on only $10,000 of annual property purchases for single taxpayers or a married taxpayer filing a separate return, or $20,000 for married taxpayers filing a joint return. In addition to 20% first-year depreciation, the taxpayer may depreciate the remaining cost of the property using any of the other methods for which the asset qualifies. When using this method of depreciation, taxpayers must file a required statement with their timely filed return.

Traveling and Transportation Expenses.

Traveling and transportation expenses which are ordinary and necessary to the conduct of a doctor's practice or employment are deductible. The cost of meals and lodging incident to such travel is deductible only if the taxpayer is away from home overnight. An employee should deduct his actual transportation and traveling expenses from his compensation. Any allowances or reimbursements which he may receive for such expenses must be added to his compensation. A doctor in practice for himself should deduct such expenses on federal Schedule C and Minnesota Form M-12.

The Internal Revenue Service requires that a taxpayer who claims a deduction for traveling expenses should attach to his return a statement showing (1) the nature of the taxpayer's business or employment, (2) the number expended for meals and lodging, and (4) the total amount of other expenses incident to the travel and claimed as a deduction.

Entertainment expenses are not considered a part of the cost of traveling, even though the expenses are incurred while the taxpayer is away from home. However, as indicated above, entertainment expenses in some instances may qualify as business expenses if they are incurred as ordinary and necessary expenses of a doctor's practice.

Travel expenses must be directly attributable to the doctor's employment or professional practice and necessary to the conduct of it. These facts must be established in the statement accompanying the taxpayer's return when the deduction is claimed. Traveling expenses, even though designated for business purposes, will not be allowed if it appears that the trip was intended to be for personal pleasure or vacation purposes.

If a wife accompanies her husband on a business trip or to a business convention the portion of the expenses attributable to her travel, meals, and lodging are not deductible, unless it is established that her presence was necessary and served a bona-fide business purpose. Doctors cannot ordinarily provide such proof. Incidental services such as typing notes, assisting in entertaining and so forth, are not sufficient to warrant the deductions.

The expenses of travel to another city to seek or to accept other employment are not deductible. Neither are the traveling expenses incurred in seeking a new location in another city for a doctor's office.

Expenses for commuting between a doctor's residence and his office are non-deductible, regardless of the distance or whether the transportation is private or commercial.

Expenses for Education

A taxpayer's expenditures for his education are generally personal and not deductible. However, the cost of education, including research activities, is deductible as an ordinary business expense where the education is undertaken primarily (1) to maintain or to improve skills required in the taxpayer's employment, trade, business or profession, or (2) to meet the express requirements of his employer or the requirements of applicable law or regulations imposed as a condition to the taxpayer's retention — and not acquisition — of his status, salary or employment. Thus, educational expenses qualify as deductions if they are for education of a "refresher" or similar type necessary to maintain the skills required by a doctor in his field of practice. Educational expenses include tuition fees, the cost of books and similar items, laboratory fees, meals and lodging, and travel and transportation expenses.

An individual is allowed to deduct educational expenses only if he is employed or otherwise engaged in a trade, business or profession during the period of the education. Furthermore, educational expenses are deductible only if the minimum requirements for qualification for a particular employment or for engaging in a trade or business or the practice of a profession have already been met. The Internal Revenue Service says that the skills "required" in a taxpayer's employment are those which are "appropriate, helpful, or needed." Thus, according to the Internal Revenue Service, education which is "customary" for established members of the taxpayer's trade, business or profession occupying positions similar to that of the taxpayer is considered to be required to maintain or to improve "required" skills.

The Tax Court of the United States, on the other hand, has emphasized the taxpayer's "primary purpose" for the education. Because the question whether educational expenses are deductible is largely a question of fact, it is appropriate to point up the difference in points of view held by the Internal Revenue Service and by the Tax Court.

A physician specializing in internal medicine had engaged in practice for three or four years, then embarked upon a two-year specialized course in analysis and techniques of psychiatry and deducted his expenditures for such education. As many physicians, he employed some psychiatric methods in the diagnosis and treatment of patients. Also, at the time of the hearing before the Tax Court, he was still specializing in internal medicine. The Commissioner of Internal Revenue disallowed deduction of the education expenses on the ground that they were not "customary." The Tax Court reversed the determination, saying that it was not "absolutely necessary that customariness be established." The Court put stress upon the "primary purpose" of the education and, pointing out that the physician continued to practice as an internist, held that the "primary purpose" of the special courses in psychiatry was to "maintain and improve his skills" as an internist rather than to allow the physician to become a specialist in psychiatry.

Entertainment and Gifts for Business Purposes.

Because expenditures for entertainment and gifts are ordinarily social or personal expenses, the burden is on the taxpayer to establish that such expenditures are reasonable in amount and have a direct relationship to the conduct of his business or profession and that business benefit is reasonably to be expected. The taxpayer must be prepared to support his entertainment expenses with a record of whom he entertained, his professional relationship to such persons, *and* the extent to which he did in fact supplement his professional earnings through such persons.

Under the prevailing rule, the costs incurred by a professional man in entertaining clients or patients are ordinarily not deductible in full, because a portion of the expense is usually attributable to himself or to his family. Consequently, only that portion of the entertainment cost for the taxpayer which is different from or in excess of the amount he would ordinarily spend for personal purposes is deductible.

A professional man may deduct his club dues if he can show that he joined the club to meet people for business reasons, and that the people he met were a source of profit to him. To be allowed as a business deduction, the relationship between club expenses and business income must be apparent and convincing. Ordinarily, only a part of the cost of dues to a social club is allowed as a deduction.

The cost of acquiring membership in a club is to be distinguished from annual, monthly, or other periodic dues. For the original cost is a capital expenditure, and is not deductible in the year paid. Nonetheless, the cost of club memberships may not, as differentiated from many capital expenditures, be amortized over a period of years.

The cost of business entertaining in the home is a deductible expense, including the cost of food, drink, catering services, flowers, and of hiring servants for the occasion. In the event of a tax examination the Internal Revenue Service is likely to require submission of strict proof, such as a list of the persons entertained, their connection with the doctor's practice, and how they increased the earnings from his practice. The Service contends that the cost of entertaining business guests at home is deductible as a business expense only to the extent of any additional expense by reason of their presence. If they bring their wives along, the position is taken that "it is doubtful whether any part of the total expense incurred would be deductible." The Service apparently regards such affairs as mere social gatherings among friends, and too remotely connected with business in the usual case to allow a deduction.

Where reciprocal entertaining is involved, as where a group of professional or business acquaintances take turns picking up each other's entertainment checks without regard to whether or not any business purposes are served, the expenses are of a personal nature and are not deductible.

With respect to Christmas gifts exchanged between business associates, the Internal Revenue Service says that unless the taxpayer includes the fair market value of the gift he receives in income, he cannot deduct the cost of the gift he sends to his associates.

In the absence of adequate records to substantiate expenses incurred, any deduction for such expenses will be in jeopardy. Detailed records should be maintained and preserved as to dates, places, and events, the names of guests, the amounts expended, and the business benefit derived or reasonably expected to be derived. These records should be supported, wherever possible, by cancelled checks, receipts, statements, or similar evidence. However, it is not necessarily true that these expenses will be disallowed merely because the taxpayer does not have complete documentary evidence which will establish a precise amount. But approximations will be considered by the Internal Revenue Service only when three requirements have been met: (1) it must appear that some expense was actually incurred; (2) the expense claimed must be so related to the taxpayer's business or profession that it qualifies as an ordinary and necessary business expense; and (3) a basis for approximation must be constructed from available evidence both as to the amount and the business purpose of the expenditure claimed.

PARTNERSHIPS

Partnership Income

Partners are liable for federal and for Minnesota income tax as individuals, and each should report his share of partnership income or loss together with other items of income or loss in determining his taxable income. The partenrship itself is a non-taxable entity, although it is required to file an information return and to report its income.

The partnership entity has the option in its first taxable year to account for income on a cash basis or on an accrual basis. Medical partnerships, as individual practitioners, customarily use the cash basis since there is no advantage in paying income tax on professional fees until actually received. Moreover, a cash-basis taxpayer may control his taxable income to a limited extent, by paying bills in the current year, or by postponing the payment of such bills until the following year. The partnership entity computes the depreciation deduction on depreciable partnership property in arriving at partnership income. Consequently, individual partners do not separately compute depreciation on their respective shares of partnership property.

Partner's Distributive Share.

Partners are liable individually for income taxes on their shares of partnership income in accordance with the partnership agreement, which may provide for different distributive shares of any item of gain, loss, deduction, or credit. However, any such provision in an agreement will be disregarded if the principal purpose is income tax avoidance or evasion. The distribution ratio for taxable income or loss, exclusive of the items required to be treated separately, would then be applied.

Medical partnership agreements frequently provide only for the division of professional fees, after payment of expenses, without reference to other items. Where no provision is made for the division of particular items, each partner's distributive share of such items will be determined in accordance with his distributive share of ordinary income or loss.

Partnership Tax Year

A new partnership may not adopt, nor may an existing partnership change to, a tax year other than that of its principal partners. A "principle partner" for this purpose is one having an interest of 5% or more in the partnership profits or capital. By application to the Commissioner, however, a partnership may adopt or change to a tax year other than that of all of its principal partners if a satisfactory business purpose for the adoption of the change can be shown.

Nonrecognition of Gain or Loss.

When a partner contributes property to a partnership—whether being formed or already in operation — neither he nor the partnership recognizes taxable gain or loss. But if a partner sells property to his partnership, he will recognize gain or loss. Thus, each partner and the partnership should choose the procedure which gives the greater tax advantage, by arranging the transfer as either a sale or a contribution to capital — whichever is desired.

Basis.

The basis of property contributed by a partner to a partnership is its cost to him. The adjusted basis of property is cost plus or minus certain adjustments, such as improvements or additions to the property or costs chargeable to the capital account during the time the property was held, which are added, or items that amount to a recovery of a part of the cost, such as depreciation, which are deducted.

Basis of Partner's Interest.

The basis of a partner's interest in a partnership acquired in exchange for a contribution of property or money, is the amount of money contributed plus the "adjusted basis" to the contributing partner of any property contributed.

Basis of Property to Partnership.

The basis to the partnership of property contributed by a partner is the "adjusted basis" of such property to the contributing partner, at the time of the contribution. In other words, property contributed to a partnership has the same basis in the hands of the partnership for purposes of determining gain, loss, depreciation, and so forth, as it had in the hands of the contributor.

Partner's Contributions.

Absent a contrary provision in the partnership agreement, items of income, gain, loss, deduction, or credit with respect to property contributed by a partner are allocated among the partners in the same manner as similar items arising with respect to property purchased by the partnership. Accordingly, an allocation will be made according to each partner's normal ratio of dividing profits and losses.

However, a provision may be made in the partnership agreement for sharing depreciation or gain or loss on contributed property among the partners so as to take account of the variation between the basis of the property to the partnership and its market value at the time of the contribution. Although such a scheme may result in possible loss (or gain) to the partners who did not contribute the specific property sold, there generally will be a corresponding gain (or loss) to such partners on sales or disposition of their interest in the partnership.

Payment of Salaries to Partners.

Salaries paid to a partner are ordinarily viewed as payments made to an outsider, and the partnership is allowed a deduction for such salaries paid. Salaries are taxable to the recipient partners even though the salaries may result in a partnership loss which must be shared by the salaried partners who cannot use the loss to reduce his basis in partnership assets because of lack of capital.

A partner who receives a salary contingent on the existence of partnership profits is fully taxable, but the payment is viewed simply as a distribution of profits and is not deductible by the partnership.

Sale of Partner's Interest.

A physician who sells his partnership interest at a profit is generally taxed at capital gain rates rather than the higher rates applicable to ordinary income. The sale is treated in the same general manner as the sale by a stockholder of shares of stock in a corporation. However, he will have ordinary income and not capital gain to the extent that the sale proceeds for his interest are attributable to the partnership's unrealized receivables.

Sale of Partner's Interest Can Increase Basis of Partnership Assets.

When a new partner buys the interest of a former partner, the cost (basis) to the partnership of its assets is normally not affected. But the partnership can elect to increase (or decrease) the basis of its assets when the interest is sold, except that this change in basis will apply only to the new partner, and not to the remaining ones. The basis of the partnership's assets may be increased by the excess of what the new partner paid for his interest over his share of the existing basis of the partnership assets, or decreased by the excess of his share of the existing basis of the partnership assets over the amount he paid for his interest.

Payments to Retiring or Deceased Partner.

When a partner retires or dies and payments are made by the partnership to the partner or his heirs, the amounts so paid may represent several items. They may, in part, represent the withdrawing partner's capital interest in the partnership. They may also include his pro rata interest in unrealized receivables or uncollected fees of the partnership.

Payments in excess of the value of the partner's capital interest in the partnership are ordinary income and not a capital gain to a retiring partner or to a deceased partner's heirs and are deductible from the partnership income of the remaining partners. In computing the value of a partner's capital interest, however, his share of the following items are excluded: (1) unrealized receivables or uncollected fees not reported as income, and (2) goodwill of the partnership, except to the extent that the partnership agreement provides for a payment with respect to goodwill.

Payments for a capital interest provide the remaining partners with no deductions, but make it possible for the recipient to receive the preferential tax treatment afforded to capital gains. On the other hand, payments representing participation in partnership income may be deducted by the remaining partners, but the recipient is taxable on such payments as ordinary income.

A payment with respect to goodwill is not deductible to the partnership. Accordingly, the acquisition of the tax benefits of capital gain to the retiring partner can be weighed against the relinquishment of the deduction to the remaining partners, with an appropriate adjustment made therefor in the amount paid to the retiring partner.

Death of Partner Can Increase Basis of Partnership Assets.

The basis of partnership assets is generally not affected by the death of a partner. But the partnership can elect to increase (or decrease) the basis of its assets when a partner dies, except that this basis change applies only to the new partner — the deceased partner's estate or beneficiary. The change of basis has no application to surviving partners.

The basis of the partnership's assets can be increased by the excess of the market value at the date of death of the deceased partner over his estate's share of the basis of the partnership's assets, or decreased by the excess of his estate's share of the basis of the partnership's assets over the market value of the deceased partner's interest at death. Consequently, as the estate or beneficiary of the deceased partner succeeds to his share valued as of the date of death, the election can increase the partnership's basis for its assets free of tax with respect to the estate or beneficiary who steps in as the new partner.

PENSION AND PROFIT-SHARING TRUSTS

Generally.

The Internal Revenue Code of 1954 provides for the qualification of pension and profit-sharing retirement trusts established by employers for the exclusive benefit of their employees. Employers' contributions to qualified trusts are immediately deductible as employees' compensation. However, employees' income taxes on contributions made on their behalf to a qualified plan are postponed until the benefits are received. Moreover, the income tax consequences applicable to such employees are surprisingly generous.

Tax Advantages.

Pension and profit-sharing retirement plans and trusts have provided a substantial tax advantage to employees, which is unavailable to self-employed persons. For example, even where profits are available to pay key employees salary increases and bonuses, personal income taxes may absorb most of the added compensation. Under a tax-exempt profit-sharing trust, however, the employer's contribution is not includible in his income. As funds accumulate in the trust they may be invested, and the income earned is tax-exempt. The employee is not taxed until his share in the trust is paid out, and it may be taxed at lower long-term capital gain rates. Contributions up to an average of 15% of the payroll may be taken by the employer as an income tax deduction. Thus a substantial portion of the employer's contributions to a profit-sharing trust is salvaged from money that otherwise would be paid in taxes.

Physicians who practice independently or as members of a partnership may establish a pension plan or trust or a profit-sharing trust for their employees, including nurses, technicians and secretaries. But as employers, the physicians are ineligible to participate in such arrangements.

Sole proprietors and members of partnerships in nonprofessional occupations can readily change their individual status by incorporating and by becoming employees of the corporation. Even though they may be controlling stockholders or corporate officers they may participate in qualified pension plans and profit-sharing trusts along with other employees. In the few states where persons may legally form a corporation for the practice of medicine this option is also available to physicians. Minnesota is not now one of such states; however the Minnesota State Medical Association proposes to sponsor legislation during the 1961 session of the Minnesota Legislature which, if successful, would permit three or more doctors to incorporate for the purpose of practicing medicine.

Some physicians, in order to qualify as "employees" for purposes of participating in such arrangements, have formed "unincorporated associations." Originally, the Commissioner of Internal Revenue would not permit doctors to form an association which would be taxable as a corporation. But in the now-familiar *Kintner* case, the Court of Appeals for the Ninth Circuit held that even though doctors could not form a corporation under state law, such state laws did not necessarily prevent an association of doctors from being taxed as a corporation under federal law.

On November 15, 1960, there were promulgated new federal income tax regulations which provide, among other things, that an organization will not be considered an association and taxed as a corporation unless the organization has "more corporate characteristics than noncorporate characteristics." These regulations have not been judicially construed, and because the area is inordinately complex, physicians should not undertake the formation of an organization in the belief that they will thereby acquire status of "employees" without the advice of legal counsel.

Annuities for Employees of Charities.

There is, however, a valuable tax break available to doctors who are employees of non-profit charitable, educational, or religious organizations exempt from tax. Such an employee can exclude from gross income — within generous limits — the premiums that his employer pays for a nonforfeitable annuity for him. In general, his annual exclusion for the premium is 20% of his current compensation, multiplied by his years of service, less any excludable premiums or qualified pension contributions paid for him by the organization. Annuity arrangements of this type are becoming increasingly popular with high-income doctors working for charitable hospitals, foundations and medical schools, whether on a full-time or a part-time basis.

It appears clear that an employee of such an organization may agree with the organization to take a cut in salary or to forego a scheduled salary increase and have the amount of the cut or foregone increase go into a nonforfeitable annuity for him. However, the agreement must cover only *future* earnings, and the organization must pay the premiums directly to the insurance company.

It should be borne in mind that an employee of a non-profit organization can avail himself of the tax advantages mentioned above only if the annuity premiums come out of the organization's funds and not from amounts already received by the employee — actually or "constructively." In other words, although income is not actually reduced to the taxpayer's possession, it is considered to be "constructively" received by him in the taxable year during which it is credited to his account or set apart for him so that he may draw upon it any time. However, income is not constructively received if the taxpayer's control of its receipt is subject to substantial limitations or restrictions. Recent decisions of the Tax Court indicate the considerable lengths to which it is prepared to go in order to find constructive receipt of annuity payments.

Assuming that the taxpayer may establish that he has not actually or constructively received income which the charitable organization uses to pay the premiums on a nonforfeitable annuity, it is essential that the taxpayer establish that he is in fact an employee of the organization, for only employees of such organizations may avail themselves of the tax break discussed above. If the organization does not withhold income and social security taxes from his salary, does not exercise a considerable degree of control over his activities, and does not furnish him with equipment and a place to work, the Internal Revenue Service will undoubtedly take the position that the taxpayer is an independent contractor rather than an employee. The presence of one or more of the foregoing factors may, however, militate in favor of the opposite conclusion.

CAPITAL GAINS AND LOSSES

Capital Gains and Losses-Generally.

Capital gains and losses are of two classes:

(1) Short-term gains and losses—those resulting from the sale or exchange of capital assets held 6 months or less; and

(2) Long-term gains and losses—those resulting from the sale or exchange of capital assets held for more than 6 months.

All short-term gains and losses are taken into account at 100% and combined to determine the net short-term gain or loss. All long-term gains and losses are taken into account at 100% and combined to determine the net long-term gain or loss. Both classes of net gains and losses may then be considered together. However, there are important differences to be observed in computing the taxability of the two classes of gains and losses:

(1) Net short-term gains are taxed in full as ordinary income. Thus, the excess of short-term gains over short-term losses — reduced by the amount of net long-term losses, if any—is added in full to ordinary income and is subject to regular tax rates.

(2) Net long-term gains are taxable, in effect, at a maximum rate of 25%. Thus, the excess of long-term gains over long-term losses—reduced by the amount of net short-term losses, if any—is taxable by the application of whichever of two alternative methods results in the smaller tax:

  (A) First, add to ordinary income (plus net short-term gains, if any) 50% of the amount by which net long-term gains exceed net short-term losses, if any; then compute the tax.

  (B) Second, make an alternative computation by calculating the tax on ordinary income (in which net short-term gains, if any, have been included); then add thereto 25% of the amount by which net long-term gains exceed net short-term losses, if any. In actual operation, unless the individual taxpayer's taxable income exceeds $18,000 ($24,000 if head of household, and $36,000 if a joint return is filed), the alternative computation (method B) ordinarily will not result in a smaller tax liability and need not be made.

(3) Net capital losses—the excess of capital losses over capital gains—whether short-term or long-term, are taken into account at 100% and may be applied up to $1,000 as a deduction for the year's ordinary income. If the year's capital loss exceeds that allowed as a deduction from ordinary income, such excess may be carried forward for the 5 next succeeding years to be applied, successively until exhausted, as a short-term capital loss. Thus, until used up within the 5-year period, the "unused" amount is first applied as a short-term loss against the next succeeding year's net short-term gains, if any; then against that year's net long-term gains, if any; then as a deduction from ordinary income in the maximum amount of $1,000 for the year.

Year-end Sales of Stocks and Securities.

The taxpayer could have sold stocks or securities up to and including December 30, 1960, in order to establish a loss during 1960. But for purposes of establishing a gain during 1960, the proceeds must have been available by the last business day of the year. Thus, cash sales or sales by a taxpayer on the accrual basis could have been made up to and including December 30, 1960. Based on the four-business-day delivery rule of New York stock exchanges, however, 1960 gains in listed securities on a "regular" delivery basis must have been recorded no later than December 23, 1960, while sales for "next day" delivery could have been effected on December 27, 28 and 29, 1960.

Limitations in Establishing Gains or Losses.

Although securities sold to establish gains may be repurchased simultaneously, losses are not allowed for tax purposes where the taxpayer has repurchased or acquired an option to purchase substantially identical securities within 30 days before or after the date of sale. Where a loss on such a "wash sale" is disallowed, the "holding period" is computed as beginning with the date the taxpayer acquired the securities sold; and the taxpayer computes his costs by adding the amount of the disallowed loss to the cost of the securities when they were repurchased.

Securities Dealt In on a "When-Issued" Basis.

Gains or losses from sales, on a "when-issued" basis of new securities in a tax-free reorganization are probably long-term gains or losses if the old securities were acquired more than 6 months before the date of making the "when-issued" contract. Similarly, they are probably short-term gains or losses if the old securities were acquired not more than 6 months before such date.

Losses Incurred on Worthless Securities.

Securities becoming worthless are computed as capital losses to the full amount of capital invested. In computing holding period, such securities are deemed to have been "sold" on the last day of the year in which they become worthless. Taxpayers are allowed 7 years under federal law and 5 years under Minnesota law within which to file claims for refund or credit resulting from worthless securities.

Capital Gains Dividends.

Capital gains dividends, whether in the form of stock, cash, or both, when distributed by a regulated investment company, are treated as long-term capital gains, regardless of the holding period of the shares on which the capital gains dividend has been paid. The cost basis of the taxpayer's shares is not reduced by the amount of such capital gains distribution.

However, long-term capital gains dividends not distributed by regulated investment companies are treated by the taxpayer as follows: (a) he includes in income as long-term capital gains an amount equivalent to his proportionate interest in the company's undistributed capital gains for the year, as designated by the company; (b) he enters in his return, for credit or refund, an amount equal to 25% tax paid by the company on the undistributed capital gains included in his income; (c) he increases the cost basis of his shares by 75% of the amount of undistributed capital gains he has included in income as long-term capital gains.

President's Letter

The words and ideas that appear on this page must reflect the thinking of the united front of medicine for all to see. They should reflect the true picture of the physician, who, as a physician, whether he is located in an urban or a rural area, is opposed to any restrictive measures which will interfere with the interests of his patients, or with his care of them. He must continue to be the disciple of the medical system which allows him to render unto his patients the care for which he was trained, and which has given America the highest quality medical care in the world. The policies which help to guide this care are formulated in our parent organizations: the Minnesota State Medical Association and the American Medical Association. It must be emphasized, however, that the membership through their chosen representatives formulate these policies, and the two organizations serve as the mechanisms to carry them out. Let us not weaken our position before the public by thinking and stating otherwise.

It is not too soon to think of our Annual Meeting in May. In my official capacity, I am privileged to be chairman of the Committee on Scientific Assembly, whose important function is to formulate the scientific program for our Annual Meeting. Generally speaking, all phases of medical practice have representation on this committee. Our meetings have brought out one main concern: the stimulation of interest and attendance at our Annual Meeting. I speak specifically of the attedance at our general assembly programs. This statement seems elementary, but it is more deeply rooted. We all have conceded that the quality of the scientific programs have always been of the highest caliber. The need to "keep up" in medicine has never been greater. Yet we sense that more interest in attendance should be forthcoming. What's the answer? As in everything else, the face of medicine is changing. Not many years ago, the Annual Meeting of the Minnesota State Medical Association was about the only meeting of the year accessible to all. It furnished the door to information that helped to fill in the gaps that the rapid scientific advances in medical sciences were constantly producing. These rapid advances in medicine gave birth to and made necessary the existence of specialties. However, with the birth of specialty groups, more meetings per year resulted; more concentration in the fields of one's special interest; primary emphasis being placed in the meetings of one's respective group. Thus, this resulted in more expenditure of time with the inevitable and unplanned result that our parent organization may be relegated to a secondary role. We must find means for a rebirth. Selfish, or should I say, unthinking fidelity to one's specialty group could ultimately lead to the situation where our Annual Meeting resolved itself into an Annual Meeting of the House of Delegates to pass on and formulate the policies for the year ahead.

The procurement of out-of-state speakers has not provided the whole answer. Members of the Scientific Assembly Committee suggested that perhaps we could create more interest by offering the opportunity for more participation by our membership. With that in mind, you were made aware of this plan through the officers of your local societies, and through our monthly newsletter from the State Office. The membership was asked to present interesting case histories or problems of every-day practice. We had hoped that this would be, in part, the answer. At subsequent meetings of the Committee on Scientific Assembly, it was found that the response was not sufficient to consider this approach for the 1961 meeting. We hope that in the future there will be a re-birth of the idea, and we do thank sincerely those who did respond to the invitation.

We are not decrying or criticizing the need for or number of the meetings of our respective specialties, but we do view with concern the fact that our Annual Meeting might assume a secondary role, due to the aforementioned emphasis. I would like to state that all of us who do belong to specialty societies should remember our heritage. We must remember that we could not belong to those individual societies of our special interest, if we did not have the same parent, namely, the Minnesota State Medical Association. If we neglect our parent, the offspring will surely suffer.

C. L. Oppegaard

President, Minnesota State Medical Association

Editorials

TRADING ULCER PAIN FOR DUMPING SYNDROME CAN BE A POOR BARGAIN—

Elsewhere in this issue appears a review of the nature of the dumping syndrome after gastric surgery by Raymond C. Read. He discusses the many explanations propounded for the unpleasant and at times disabling symptoms which often appear in the patient who has had gastric surgery for peptic ulcer. Dr. Read's theory that these symptoms result from the physiological effects of hyper-osmolarity on the gastro-intestinal tract, the brain, cardiovascular system, and musculature is a logical and stimulating new approach to the problem. His experiments, and those of others, on the relationship of these symptoms to increased local production of acetylcholine seem to provide a sound basis for his theory.

Gastric resection is not the only type of surgery for ulcer which can be followed by the dumping syndrome, for it is well known that simple gastroenterostomy, gastro-enterostomy with vagotomy, and the Bilroth I resection, or pyloroplasty and vagotomy, may all result in this distressing sequella for the ulcer patient. In a recent double-blind study of the results and complications of Bilroth II resections compared with segmental gastric resections done at the Minneapolis Veterans Administration Hospital by Dr. Donald Ferguson and his surgical staff, the conclusion was reached that the incidence of postoperative dumping syndrome was about the same with either type of operation. Occasionally dumping symptoms have been noted in unoperated patients, presumably due to rapid emptying of the stomach.

What, then, should constitute real indications for subjecting an ulcer patient to surgery for his ulcer, when the dumping syndrome, recurrent ulcer, inability to maintain adequate nutrition and other lesser sequellae of surgical intervention may result? Wide variations of opinion as to the answer to this question fill the literature. If pain alone is the presenting symptom, even though it has been present intermittently for many years, the physician should exert every possible means of medical therapy before deciding that the patient needs surgery. Too often, so-called "medical failures" can be laid at the door of the physician. There are very few that are intractable peptic ulcers in which the pain cannot be controlled by adequate acid neutralization. The physician may prescribe a bland diet and a few tablets or teaspoonfuls of antacid daily. Then because the patient's symptoms are not controlled he is subjected to surgery, only to become far more uncomfortable from dumping or malnutrition than he was with his ulcer. Such patients might have been spared surgery by a more intensive neutralization of gastric acidity. Many gastro-enterologists now advocate that once the ulcer has healed, clinically and by x-ray, the patient should follow indefinitely or permanently a partial neutralization schedule to prevent development of another ulcer.

In many instances, the patient, rather than the ulcer seems to be intractable in that he will not follow an intensive medical ulcer regime long enough to heal his ulcer. These patients are most difficult to deal with, and require thorough education by the physician regarding the necessity of carrying out instructions over a long period. Frequently these patients can be brought into line by letting them talk to other patients who have been operated upon only to suffer some of the unpleasant sequellae of ulcer surgery. The chronic alcoholic who develops an ulcer is particularly a person in whom surgery should be avoided at all costs unless life-threatening hemorrhage supervenes. These patients, who already have serious problems of nutrition, are prone to serious nutritional difficulties after gastric surgery. Impaired liver function may become even more acute after gastric resection.

Organic obstruction of the duodenum or pylorus by scar tissue requires surgical intervention except occasionally if the obstruction is not marked or if the patient is a poor operative risk. In these cases the patient can be kept in reasonably good health, and the ulcer often will heal on a combination of acid neutralization plus nightly emptying of the stomach by use of an Ewald Aspirator. Patients can easily be educated to use this tube before retiring. Very few develop serious electrolyte disturbance.

Repeated massive hemorrhage from an ulcer, if it occurs in spite of a good acid-neutralization regime, should be an indication for surgery. However, the mere fact that a patient has had one or more hemorrhages in the absence of a satisfactory acid neutralization regime, does not mean that he should be operated upon. Most of these patients can be salvaged by a proper medical regime if carried out for a long enough time, and then followed by a permanent partial neutralization schedule as mentioned above.

The greatest problem for both medical and surgical ulcer treatment is the personality problem patient. Many of these people are overly dependent, immature, hostile individuals whose chronic ulcer symptoms have been a crutch on which they have leaned for years, in order to avoid working and accepting responsibilities of supporting their families. When this crutch is removed by surgical intervention, they are prone to end up as chronic dumpers or with severe nutritional problems. Discerning surgeons are wary of operating on such persons, no matter how long or how severe have been the ulcer symptoms.

While there are definite indications for gastric surgery in the treatment of some peptic ulcers, surgery is not without its distressing sequellae, among which the dumping syndrome probably heads the list. These sequellae can be more incapacitating than the original disease which prompted the surgery. A careful evaluation of the patient's personality traits and a greater effort by the physician to control the patient's gastric acid level will often be rewarding and may save the patient from the unhappy or even disastrous end-results of injudicious surgical intervention.

J. Allen Wilson, M.D.
St. Paul, Minnesota

ROENTGEN EXAMINATION IN MASSIVE GASTRO-INTESTINAL BLEEDING

Gastro-intestinal bleeding is a sign to alert the doctor to the fact that there is some type of pathological process in the patient's gastrointestinal tract. With massive bleeding there is a diagnostic challenge that has to be met with some urgency. Aside from the gastroscope and sigmoidoscope and resorting to exploratory laparotomy, the roentgenological examination is the chief diagnostic approach to this problem. All patients with massive gastro-intestinal bleeding who are able to cooperate sufficiently, should be submitted for roentgen exploration of their intestinal tract as soon as it is reasonably possible. The sooner the surgeon has knowledge of the site of bleeding, the more time he has to plan the treatment. Procrastination may be rewarded by disastrous deterioration of the patient beyond the point where he can withstand any type of roentgenological or surgical procedure.

Due to the feeling that palpation of the viscera associated with the roentgenological study may precipitate more hemorrhage, some clinicians have preferred to defer roentgenological examination until efforts to establish the patient's well being have either proved successful or futile. Now, however, with improved examining technic utilizing air and barium studies little or no palpation is necessary. Concern on this basis is not valid. In addition the better visualization offered by image amplification provides for a higher degree of accuracy in the detection of lesions. Barium air studies of the stomach can be carried out with very little actual manipulation pressure on the stomach. Air studies of the duodenal bulb also require no manipulation and have been very gratifying in detecting early minimal ulcerations, especially in the distal portion of the bulb. The mucosal erosion non-penetrating type of peptic ulcers are particularly susceptible to this type of detection. The same degree of diagnostic accuracy applies to examination of the colon using the air barium studies with the preparation for these studies commensurate with the condition of the patient. However air inflation of the colon must be strictly controlled and inflation very gradual so that no distending damage will occur to the colon during the procedure.

In regard to the diverticulosis and diverticulitis underlying the massive colonic hemorrhage exhibited by the patients, described and discussed by Dr. Daniel J. Moos in this issue, these changes are readily demonstrated by the air barium studies of the colon. In fact it is the author's experience that where two consecutive colon studies have been carried out on the same patient, one with the opaque method and one with the air barium method, more diverticula have often been demonstrated by the latter method than were seen on the opaque study. Thus areas of very early minimal diverticulosis can be detected with relative ease. This concept is reasonable when one considers that air will penetrate into small fissures, strictures, and pockets more readily than the somewhat heavy liquid media, and penetrating into these pockets most of the time the air carries enough of the barium flecks with it to give some degree of outline of the structures. If the general search for the cause of gastro-intestinal bleeding shows that the esophagus, stomach, duodenum and colon are all negative, then the quest for the source of bleeding should be directed to the small bowel, which is often neglected as a source of pathology.

Patients who exhibit massive gastro-intestinal bleeding, whose immediate outlook is not in peril, who can cooperate in some degree, should be submitted for roentgenological examination as soon as it is reasonably possible with the prior preparations commensurate with the condition of the patient. With the new examining media, the new technics, and the advances in technical equipment, the diagnostic harvest of pathology in the intestinal tract is reaching a new apogee.

Eugene E. Ahern, M.D.
Minneapolis, Minnesota

"WHAT IS YOUR DIAGNOSIS?"
HERE'S THE ANSWER!

(From page 55)

Cryoglobulinemia. The test—a viscid layer forms when the serum is cooled to 4 degrees Centigrade, and redissolves when the serum is warmed. The exact etiology of the cryoglobulinemia in this case is, as yet, undetermined. Twenty-five percent will be essential, 50 percent will be a multiple myeloma, and the other 25 percent will be divided among chronic liver disease, lymphomas, collagen diseases. and other factors.

John E. Smith, M.D.
Minneapolis, Minnesota

Major A.M.A. Clinical Meeting Delegates' Actions Reviewed

Delegates attending the Monday opening session of the American Medical Association's Fourteenth Clinical Meeting held in Washington, D.C., November 28 - December 1, 1960, were asked by President Dr. E. Vincent Askey of Los Angeles to support not only existing programs of the Association, but also expansion of new programs to meet the challenges of society. Dr. Askey assured the new administration in Washington of cooperation whenever and wherever possible, but emphasized that the A.M.A. will not change its policies merely for the sake of conformity.

Total registration reached 8,170, including 3,940 physicians and 4,239 guests.

Scholarship and Loan Program

The House of Delegates approved a scholarship and loan program proposed by the Special Study Committee of the Council on Medical Education and Hospitals, and also urged that there shall be local participation in the program at the state and county level. In commenting on the two-part program, the House approved the following statement by the reference committee:

"This proposed program will provide concrete evidence of the American Medical Association's sincere desire to attract increasing numbers of well qualified young people to enlarge the ranks of our profession. Your reference committee recognizes that the program is wisely designed to allow for its enlargement through the support of individual physicians and other groups. Your reference committee was impressed with the enthusiastic support of this proposal indicated during the course of the discussion. There was indicated a desire that in the final formulation of the administrative details of this program, provision be made for widespread participation by individual physicians as well as county and state medical societies. The program will clearly assist in securing highly talented individuals whose ability and leadership in all areas of medicine will be fostered and at the same time will bring needed financial assistance on a broad basis to medical students under a system in keeping with this Association's belief in individual responsibility."

Foreign Medical School Graduates

Meeting the problem of foreign medical graduates, the House of Delegates adopted a report which included the following statement:

"In order that those foreign physicians who have not yet been certified by the Educational Council for Foreign Medical Graduates might be given further opportunity to enhance their medical education, hospitals would be encouraged to develop special educational programs. Such programs must be of educational worth to the foreign graduate and must divorce him from any responsibility for patient care. Foreign physicians may participate in these programs until June 30, 1961, with approval of the Department of State so that their exchange visa will not be withdrawn before that time. This will also allow the non-certified foreign physician the opportunity to take the April, 1961, Educational Council for Foreign Medical Graduates examination."

A.M.A. Dues Increase

The House approved a Board of Trustee report which announced that a dues increase would be recommended at the Annual Meeting in June 1961. The report indicated that the amount would be not less than $10 and not more than $25 to be effective January 1, 1962. The Reference Committee asked the Board to consider an increase in the annual dues of $20.00, to be implemented over a period of two years: $10.00 on January 1, 1962, and $10.00 additional on January 1, 1963.

The House suggested that these funds be used to inaugurate or expand a number of programs including:

1. Financial assistance to medical students.
2. Continuing education for practicing physicians.
3. Health advice to the lay public.
4. Medical research.
5. The expansion by the Communications Division of its program of faithfully portraying the image of the American Medical Association.

It is important, the House emphasized, that the Board of Trustees report recommending a dues increase be transmitted in essence to the grass roots level.

Voluntary Health Insurance

In place of a Board of Trustees report and three resolutions, the House adopted the following substitute resolutions:

"Whereas, It has been widely recognized that voluntary health insurance is the primary alternative to a compulsory governmental program; and

"Whereas, The public has shown its confidence in this voluntary system; and

"Whereas, Current social, political and economic developments compel a new and revitalized effort to make voluntary health insurance successful; and

"Whereas, The American Medical Association has consistently pledged itself to make available the highest type of medical care, therefore, be it

"*Resolved*, that the House of Delegates direct the Board of Trustees and the Council on Medical Service to assume immediately the leadership in consolidating the efforts of the American Medical Association with those of the National Association of Blue Shield Plans, the American Hospital Association and the Blue Cross Association into maximum development of the voluntary, non-profit pre-payment concept to provide health care for the American people; and be it further

"*Resolved*, that similar leadership be undertaken to coordinate the efforts of private insurance carriers through conferences with their national organizations; and be it further

"*Resolved*, That, where feasible, efforts be made to cooperate with representatives of other types of medical care plans, other professional groups, and representatives of industry, labor and the public at large."

Health Care for the Aged

The House reaffirmed the Association's support of the Kerr-Mills Bill, which was passed last summer, and its opposition to any legislation involving the use of the OASDI mechanism for medical aid to the aged. The delegates also urged all state and local medical societies to cooperate with the appropriate state officials and provide leadership in implementing the provisions of the Kerr-Mills Bill.

In connection with health care for the aged, the House suggested further experimentation in home care programs, homemaker services and visiting nurse services. The delegates also recommended an increased emphasis at all levels of medical education on the new challenges being presented to physicians in the health care of older persons.

Polio Vaccine

The House agreed with a Board of Trustees report which said:

"In view of the fact that oral polio vaccine will not be generally available in sufficient quantity in 1961 for any large scale immunizing effort, the Board of Trustees of the A.M.A. strongly recommends that the medical profession encourage the widest possible use of the Salk vaccine for the prevention of poliomyelitis. The Salk vaccine has been proved to be effective and since there are still many segments of the population not immunized against poliomyelitis every effort should be made to encourage the general public to take advantage of the Salk vaccine without delay."

The Board report was amended to suggest that a proper committee be established by the A.M.A. to study the problems involved in administration of the new oral polio vaccine and to establish guides for physicians to follow when they are approached by various groups and asked for their support in administering oral polio vaccine.

Miscellaneous Actions

Named as 1960 General Practitioner of the Year was forty-four year old Dr. James T. Cook of Marianna, Florida, who was selected for his dedication to both medical practice and service to the community. Dr. Cook is the fourteenth recipient of the award.

In considering a wide variety of resolutions and annual and supplementary reports, the House also:

Approved continuing study and periodic reevaluation of the trend toward locating *physician's offices* in or adjacent to hospitals;

Directed the Committee on Medical Care for Industrial Workers to carry out its duties as previously instructed and to prepare guides for physician relationships with *medical care plans* in conformity with the clear policies already laid down by the House of Delegates;

Approved a set of guides relating to drug expenditures for *welfare recipients;*

Asked the Board of Trustees to study the question of blood replacement responsibility and also the matter of establishing health insurance fee schedules for *surgical assistants;*

Urged the Board to make every effort to reduce the number of physicians who are non-dues-paying members and approved a three-year study report on the relationships of *physicians not-in-private-practice* to organized medicine;

Requested the Board to present a completed *retirement* and *disability* insurance program for A.M.A. members at the June, 1961, meeting, and

Agreed that the *General Practitioner of the Year Award* should be continued as at present.

A PROPOSED TUBERCULOSIS CONTROL AND TREATMENT PROGRAM FOR MINNESOTA

To speed the control and eradication of tuberculosis in Minnesota, the following recommendations are offered:

I. FACILITIES AND PERSONNEL

1. A physician with training in public health and with adequate experience in the control of tuberculosis should be employed by the Minnesota Department of Health as a Tuberculosis Control Officer to coordinate and carry out the control program for the entire state.

2. The additional personnel and facilities necessary for implementation of the tuberculosis-control program should be provided by the Minnesota Department of Health to assist physicians and county nurses in the follow-up and management of tuberculous patients and to assist in obtaining epidemiologic data concerning tuberculosis.

3. The public-health nursing staff should be increased in counties having a high incidence of tuberculosis. There should be at least one nurse in every such county, and additional nurses should be provided if needed.

4. Greater utilization should be made of the eight district offices of the Minnesota Department of Health for local tuberculosis control, and each district office should maintain a case register.

5. The Minnesota Department of Health should provide laboratory services for the sensitivity testing of tubercle bacilli when requested by the physician.

6. A special Tuberculosis Mortality Committee of the Minnesota State Medical Association should be appointed to study all deaths from tuberculosis in Minnesota, especially in those cases first reported by the death certificate.

Joint statement by the:
- Minnesota Chapter of the American College of Chest Physicians
- Minnesota League for Nursing
- Minnesota Nurses' Association
- Minnesota State Department of Health
- Minnesota State Live Stock Sanitary Board
- Minnesota State Medical Association
- Minnesota Thoracic Society
- Minnesota Tuberculosis and Health Association

II. CASE FINDING

1. We should strive, by every means possible, to encourage the private physician to utilize tuberculin tests and chest x-rays routinely in the care of the apparently healthy as well as the ill patient.

2. Tuberculin surveys:

a. County medical societies in cooperation with the local health departments and the Christmas Seal organization should be encouraged to carry out tuberculin-testing programs in the public and parochial schools of their areas.

b. The school certification program that has been carried out by the Minnesota Tuberculosis and Health Association under the auspices of the American School Health Association, with approval of the Minnesota State Medical Association and the Minnesota Department of Health, is endorsed.

c. All positive reactors to tuberculin found in school tuberculin surveys should have chest x-ray examinations, with thorough investigation of contacts.

3. All school teachers and school employees should be required by law to show freedom from active tuberculosis as evidenced by an annual chest x-ray examination or by presenting evidence of a negative tuberculin reaction within the preceding year.

4. All colleges, trade schools and similar institutions should be encouraged to require a student to have a tuberculin test, and a chest x-ray if tuberculin-positive, on admittance to the school.

5. The following groups having an increased incidence of tuberculosis should have chest x-rays and appropriate investigation of any abnormal findings:

a. Persons admitted to jails and workhouses.

b. Persons admitted to Salvation Army shelters and similar facilities.

c. All food handlers, annually.

d. Persons admitted to nursing homes, rest homes and homes for the aged.

e. All persons more than 15 years of age who are admitted to hospitals or hospital outpatient clinics.

6. Mobile-Unit Chest X-ray Surveys:

a. A chest x-ray mobile unit should be made available on a statewide basis. This could be operated by the state and county Christmas Seal organizations, with the cooperation of the Minnesota Department of Health.

b. Mobile-unit chest x-ray surveys should be conducted annually among those having an increased incidence of tuberculosis, such as migrant workers, skid-row inhabitants and residents of congested population centers.

7. Pathologists, private physicians and clinical laboratories should be encouraged to cooperate in reporting all newly discovered cases of tuberculosis.

III. TREATMENT OF ACTIVE TUBERCULOSIS

1. Adequate diagnostic and treatment facilities should be available to all patients with tuberculosis.

2. Management of tuberculosis by chemotherapy should be recognized as a public-health, as well as a purely medical, problem and responsibility.

3. Treatment of the patient with active tuberculosis must be under continuous medical supervision and, with rare exceptions, should be initiated within a hospital, preferably a sanatorium specializing in tuberculosis. At present, this is the best means of instituting adequate therapy, of educating the patient about his illness, of helping him adjust to it, and of protecting the patient's family and the public.

4. The decline in the number of hospitalized tuberculous patients makes it economically difficult to maintain most of our sanatoria. Therefore, patients should be centralized in hospitals or sanatoria where it is economically feasible, with due regard for the maintenance of high standards of medical care. Sanatorium or hospital facilities must be maintained as long as the need exists. Private and public general hospitals should be encouraged to accept patients with active tuberculosis, but only if satisfactory isolation can be maintained and the treatment of the tuberculosis can be supervised by a physician experienced in the management of the disease.

5. The decision to discontinue using a sanatorium for the treatment of tuberculosis must, of course, be made by the official agencies operating that facility. Recognizing that the decrease in case loads has eliminated the need for some sanatoria and that some do not meet the standards of care to which Minnesota residents are entitled, the report of the Tuberculosis Facilities Commission of January, 1955, is fully endorsed insofar as it is applicable today. The Commission's report should be called to the attention of county commissioners and sanatorium commissioners throughout the State.

6. Some patients are discharged from sanatoria before treatment is completed, and an occasional selected patient is treated without hospitalization. Because the non-hospital care of patients with active tuberculosis presents special problems, the statement of the Committee on Therapy of the American Thoracic Society (formerly the American Trudeau Society) entitled, "Recommended Standards for Home Care of Patients With Tuberculosis," should be observed. (Ref.: Am. Rev. Tuberc., 78:655, 1958.)

IV. PREVENTION AND PROPHYLAXIS

1. Vaccination with BCG should be considered only in instances in which a nonreactor to tuberculin is going to experience unusual exposure to tubercle bacilli.

2. The Infectious Disease Committee or other appropriate committees of all private or public general hospitals should organize, with the cooperation of hospital administrators, if not already in existence, a standardized technic for room isolation of patients with known active tuberculosis or those suspected of having active tuberculosis.

3. The Infectious Disease Committee or other appropriate committees in all hospitals should organize, with the cooperation of hospital administrators, a tuberculosis-prevention program for hospital personnel.

4. The successful program of tuberculosis surveillance among cattle and livestock, established and maintained by the Minnesota State Livestock Sanitary Board, should be continued by that Board.

5. Prophylactic chemotherapy with isoniazid should be *considered* in the following circumstances:

a. Infants up to 1 year of age who have been exposed to a patient with open tuberculosis.

b. Tuberculin reactors in the preschool age group.

c. Adults and children with known, or probable, recent tuberculin conversion.

d. Patients with inactive tuberculosis who never had had chemotherapy and are suffering from conditions known to cause increased susceptibility to reactivation, such as diabetes, steroid therapy, gastrectomy, silicosis, sarcoidosis, acute pneumonia, severe trauma or alcoholism.

V. FOLLOW-UP AND REHABILITATION

1. Need exists for recognition by the medical profession, through education, that initial treatment of the patient with active tuberculosis should be prolonged and that follow-up treatment and examinations, after the inactive phase has been attained, must be continued for the remainder of the patient's life.

2. Follow-up of contacts of patients with active tuberculosis is mandatory, with cooperation between private physicians and public-health authorities.

3. Rehabilitation, in the broadest sense, remains a necessary part of the treatment of tuberculosis, since additional complications, such as alcoholism, silicosis, diabetes, gastrectomy, advanced age and chronic illness, are frequently present.

VI. EDUCATION, RESEARCH AND COORDINATION

1. Education of the public, physicians and other professional groups in the basic principles of modern tuberculosis control should be persistent and intensive.

2. The private physician will play an ever-increasing role in the treatment of tuberculosis, particularly in non-urban regions. More information regarding control and therapy must be made available to him.

3. Closer cooperation is desirable between the Minnesota Chapter of the American College of Chest Physicians, the Minnesota Department of Health, the Minnesota Department of Public Welfare, the Minnesota Hospital Association, the Minnesota Nurses Association, the Minnesota Public Health Association, the Minnesota State Medical Association, the Minnesota State Veterinary Medical Association, the Minnesota Thoracic Society, the Minnesota Tuberculosis and Health Association, and all related lay and professional groups in working out a dynamic program for the eradication of tuberculosis from our state. The following groups will continue to be involved cooperatively, in the implementation of these principles:

Health Departments
Voluntary Tuberculosis Associations
Medical Associations
Sanatoria
Universities and Colleges
Welfare Departments
Private and Public Hospitals and Private Physicians
Auxiliary Professional and Lay Groups

4. The above-mentioned and other lay and professional organizations should foster and finance scientific research on matters of current importance to tuberculosis control, with special reference to problems in Minnesota.

VII. LEGISLATION

1. The Legislative Committees of the Minnesota Thoracic Society and the Minnesota Tuberculosis and Health Association should work with the appropriate committee of the Minnesota State Medical Association for the purpose of proposing legislation regarding tuberculosis care and control to be presented to the forthcoming session of the Minnesota State Legislature.

2. The "means test" should be abolished in Minnesota for all patients being treated for tuberculosis in tax-supported institutions, and all patients in these institutions should be given free medical and hospital care regardless of their ability to pay.

3. One half of the cost of care of tuberculous patients in tax-supported institutions should be borne by the county of which the patient is a resident, the other half being borne by the state.

4. All school teachers and school employees should be required by law to show freedom from active tuberculosis as evidenced by an annual chest x-ray examination or by presenting evidence of a negative tuberculin reaction within the preceding year (see item II-3).

5. Budgetary requests of the Minnesota Department of Health for improvement of the tuberculosis program in Minnesota should be approved by the State Legislature.

The Art of Medicine

PR

Carl H. Woyke
Editor

YOU AND YOUR MINNESOTA STATE MEDICAL ASSOCIATION MAIL The United States mail is a vital link between you and your State Association. As a physician you receive large quantities of mail. Your name has been included on the mailing lists of many firms and organizations. Each piece of mail directed to you is competing for a portion of your time, your operational dollar, your benevolent dollar, your investment dollar, ad infinitum.

Also directed to your attention via your postman are drug samples, advertising materials, medical journals (paid and free circulation); all designed to capture your attention.

The wise physician has oriented his office girl to separate the post wheat from the tares, bringing to his attention only those matters which require his consideration. Materials which have no interest to the physician are thrown in the wastebasket.

Is there a possibility that your office girl may be discarding mail directed to your attention from your State Association? Could it be that while scanning the mail an important communication from your State Office may inadvertantly find its way to the wastebasket to be classified with other "junk mail"?

Mailings directed from the State Office have a purpose. Whether the correspondence is intended for the entire membership, a committee or an individual, the fact that it is addressed to you should indicate that a message is intended for you.

The price of communicating is costly in terms of postage, manpower and materials. Therefore, any decision to blanket the membership or a segment of the membership with a mailing is not taken lightly.

The decision to use first, second, third or fourth class postage is strictly budgetary and has no bearing on the importance of the content of the mail. Likewise, printed or mimeographed matter, rather than "individually" typed letters must often be used to hasten the message in addition to keeping the cost in line.

Don't let your office girl overlook or discard any item of mail from your State Office, regardless of size, shape or postal classification.

The contents of the envelope addressed to you from the Minnesota State Medical Association may contain the monthly Newsletter, the notice of a committee meeting, your Annual Meeting program. important Medicare or other legislative information — or even a check.

The Mail Moral: Look Before You Toss.

DO WE HAVE YOUR CORRECT ADDRESS? Following each membership mailing, your State Office receives a number of returns due to incorrect addresses. You can help prevent delay or non-receipt of Association mail if you will check to see that your correct address is on our addressograph plates.

This is particularly important if you have recently had a change of address. Post Office charges for mail returned to the sender for reasons of an insufficient or incorrect address is costly. In addition to the original cost of mailing, there is a charge for the return of this mail to the State Office. The cost of directing the mail to the correct address must also be considered.

* * *

HOW TO ADDRESS YOUR MAIL Improve your postal public relations. The Post Office Department lists the following tips on how to address mail.

Envelope Size

Use envelopes of standard sizes in order that your mail may be more easily and quickly handled. Envelopes which are less than 2¾ by four inches, are nonmailable. Envelopes larger than nine by twelve inches are not recommended.

Window Envelopes

Window envelopes, open panel envelopes, may be used under the following conditions:

a. The address window must be parallel with the length of the envelope.
b. The proper place for the address window is in the lower portion of the address side.
c. Nothing but the name, address and any key number used by the mailer may appear through the address window.
d. The return address should appear in the upper left corner. If there is no return address and the delivery address does not show through the window, the piece will be handled as dead mail.
e. The address disclosed through the window must be on white paper or paper of a very light color.

General Information

Write the names and addresses clearly and legibly. Mail addressed to letter-carrier offices must include the street and number, or post office box number.

Include the postal delivery zone number on mail addressed to cities using that system.

Matter bearing dual addresses or the names of more than one post office in the return address or in the recipient's address is not acceptable for mailing.

Matter bearing instructions to return to *Point of Mailing* (postmark) is not acceptable for mailing.

Arrangement of Address

The proper place for the address is in the lower right portion of the address side; the postage (stamps or meter stamps or permit imprints) in the upper right corner; and the return address of the sender in the upper left corner.

Leave enough space on the address side of all mail for necessary directions or endorsements and the postage stamps and postmarking. Leave at least 3½ inches of clear space, from top to bottom, at the right end of the address side of envelopes, folders or labels. On large envelopes or mailing pieces leave a clear rectangular space of not less than 5 by 3 inches for the address, stamps, postmarks, etc.

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Minnesota Blue Shield

Following the announcement by the Blue Shield Board of Directors that the Minnesota Blue Shield Senior Citizen Plan has been opened for continuous enrollment, C. L. Oppegaard, M. D., Crookston, president of the Minnesota State Medical Association, issued the following statement:

"The Minnesota State Medical Association congratulates Blue Shield on the opening of enrollment in its Senior Citizen Plan on a continuous basis.

"The Blue Shield Senior Citizen Plan represents a voluntary method of providing adequate medical-care at a reasonable cost for those 65 and over.

"Blue Shield's plan, which was developed in cooperation with the State Medical Association, is a clear indication of the medical profession's desire to take positive action in meeting the needs of this age group.

"The low cost of this protection means that a large number of older citizens can afford to meet their own medical-care needs without sacrificing their independence under a government-sponsored program."

Under the Senior Citizen Plan, persons 65 and over, who are not already Blue Shield subscribers, can receive medical-surgical coverage, without a prior physical examination, at a cost of $2.95 per month.

Benefits are provided for up to 120 days of medical-care while a hospital patient, the full range of Blue Shield surgical allowances, electroshock therapy, x-ray treatment for specific conditions, endoscopic examination, and certain anesthesia services. Also included are benefits for diagnostic x-ray and laboratory services, when performed in the doctor's office, the patient's home, or in the out-patient department of a hospital.

Previously, the Senior Citizen Plan was offered during limited enrollment periods only.

* * *

Minnesota Blue Shield fees for the following gynecology procedures have been increased from $75 to $100 under Plan "A" and from $125 to $150 under Plan "B": salpingectomy, complete or partial, unilateral or bilateral; salpingo-oophectomy, complete or partial, unilateral or bilateral; salpingoplasty for sterility, unilateral or bilateral; drainage of ovarian cyst or abscess, unilateral or bilateral; excision of ovarian cyst, unilateral or bilateral; complete oophorectomy, unilateral or bilateral; partial oophorectomy, unilateral or bilateral; oophoroplasty, unilateral or bilateral; and oophoropexy, unilateral or bilateral.

In addition, the fee schedule has been changed to add the following new items; spinal fusion for scoliosis, $200 Plan "A," $300 Plan "B"; ileotransverse colostomy, $125 Plan "A," $200 Plan "B"; urethrotomy, internal, $50 Plan "A," $75 "B"; repair of abdominal aneurysm, $200 Plan "A," $350 Plan "B."

Allowances for the following procedures have been increased: Arthroplasty (plastic reconstruction with mechanical device with or without bone or facial graft, major joint), increased to $200 under Plan "A" and $300 under Plan "B"; esophagoplasty (plastic repair or reconstruction of esophagus), increased to $200 under Plan "A" and $350 under Plan "B"; and repair of meningomyelocele, increased to $150 under Plan "A" and $250 under plan "B."

Board of Medical Examiners

JURY FINDS "HAIR SPECIALIST" GUILTY OF BASIC SCIENCE VIOLATION AT ST. CLOUD

Re: State of Minnesota vs. R. K. Hanson

On December 2nd, 1960 Raymond Keith Hanson, 35, 4844 Fifth Ave. S., Minneapolis, Minnesota was sentenced by the Hon. E. J. Ruegemer, Judge of the District Court of Stearns County, to a term of one year in the Stearns County Jail, the defendant having been found guilty by a jury on the same date of the crime of practicing healing without a basic science certificate. Judge Ruegemer then ordered the execution of the sentence stayed and placed the defendant on probation until the further order of the Court on condition that he reimburse Stearns County for the cost of the trial, that he obey all laws, that he desist from engaging in his occupation or any occupation requiring a license under Minnesota law, and that he report to the Stearns County Probation Officer regularly and obey his instructions.

On April 28th, 1960 a representative of the Minnesota State Board of Medical Examiners signed a criminal complaint against the defendant after it had been called to the attention of the Board that Hanson had diagnosed a scalp condition of a 62-year-old St. Cloud woman as psoriasis and had charged her $160 for a course of treatments, $10 having been paid to Hanson at the time of the examination on February 10th, 1960 and a bill for the balance being received by her later from the Erickson Hair and Scalp Specialists of Chicago, the firm that Hanson represented. She also received in the mail at that time various drugs, medicines and lotions to be used by her for treating her scalp by following the instructions in the accompanying leaflets. The case was brought to the attention of the Minnesota State Board of Medical Examiners after the patient was hospitalized in the St. Cloud Hospital with an acute contact dermatitis of the scalp.

An advertisement in the St. Cloud Daily Times on April 27th, 1960 referred to the Erickson Hair and Scalp Specialists as being the "World's Largest Home Treatment System." The advertisement further stated: "Hair Specialists Here Tomorrow; Will Show How to Save Hair and Prevent Baldness" and also that "Consultant R. K. Hanson" would be in St. Cloud on the following day to "personally examine hair-worried men and women from 12:30 to 8:30 p.m." However, Hanson did not appear at the hotel in St. Cloud referred to in the advertisement and therefore a warrant was issued for his arrest on April 28th based on his diagnosis and treatment on February 10th of the patient mentioned above. After a joint investigation by a representative of the Minnesota State Board of Medical Examiners and the Minneapolis Police Department the defendant was located in Minneapolis on July 6th where he was served with the warrant. On August 22nd, 1960 he waived a preliminary examination at St. Cloud whereupon he was bound over to Stearns County District Court for trial.

The defendant Hanson, who has no training in medicine and holds no license to practice any form of healing in the State of Minnesota, attempted at his trial to convince the jury that his activities on February 10th, 1960 at St. Cloud were lawful because he was exempt from the provisions of the basic science law, inasmuch as he is a cosmetician and had confined himself to the ordinary scope of that occupation. However, the jury did not agree with his contention. On cross-examination the defendant admitted that he holds no license in Minnesota which is issued by the State Board of Hairdressing and Beauty Culture Examiners. The Minnesota State Board of Medical Examiners would like to point out in connection with this case that it is unlikely that the defendant would have been successfully prosecuted if the physician who hospitalized the patient had not taken prompt action to obtain her consent to report the matter.

Minnesota State Board of Medical Examiners
J. P. Medelman, M.D., Secretary

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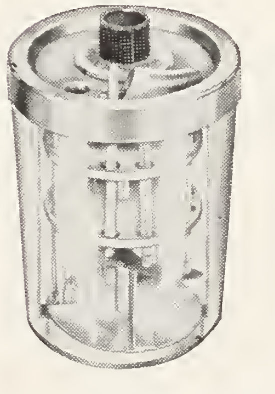

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In Memoriam

KARL A. DANIELSON

Doctor Karl A. Danielson, one of the State's oldest physicians, died January 5, 1961, at his home in Litchfield, Minnesota. He had practiced steadily until forced to retire by failing health three months ago.

Doctor Danielson was born February 10, 1875, at Vexio, Province of Smoland, Sweden. He came to this country with his parents at five years of age and lived on a farm near Red Wing, Minnesota, during his youth. Later he attended High School in Minneapolis and received his M. D. degree from the University of Chicago and Rush Medical School October 14, 1901.

He practiced at Twin Valley, Minnesota, from then until 1906 when he moved to Litchfield, Minnesota, where he remained. He was a member of the A. M. A., M. M. A., 50 year Club and the Kandiyohi-Swift-Meeker County Medical Society. He was an active instigator of the Litchfield Hospital in 1910 serving as director and Medical Staff member until it was replaced by the Meeker County Memorial Hospital in 1951. He continued on the staff of the latter until his death.

His anecdotes of long sleigh rides, early automobiles, home obstetrics, and kitchen table surgery would make a small volume in themselves.

He achieved Fellowship in the American College of Surgeons October 25, 1918, and served a short period as Captain in the U. S. Army Medical Corps in 1918.

In 1932 he was appointed Great Northern Railroad Surgeon for Litchfield and continued on until his death.

He was a Past President of the Crow River Valley Medical Society and the Kandiyohi-Swift-Meeker Counties Medical Society. He served on the Charter Planning Commission for the City of Litchfield.

In 1902 he was united in marriage with Susana Lennox, who passed away October 6, 1931. Three children were born to this union. Doctor Lennox Danielson of Litchfield, Karl Danielson of Minneapolis and Doctor Martha Danielson Goss of Tucson, Arizona.

On October 24, 1935, he was united in marriage to Clara Niedermeier. He is survived by his wife Clara, three children, eight grandchildren and four great grandchildren.

Funeral services were held at two P.M., January 9, 1961, at Trinity Episcopal Church of Litchfield. Reverend Walter Schroeder officiating. Internment was at Ripley Cemetery.

DORR FOSTER HALLENBECK

Dr. Dorr F. Hallenbeck, Mayo Clinic, Rochester, died in St. Mary's Hospital in Rochester, December 3, 1960, of pneumonia arising after a cerebral infarction.

Dr. Hallenbeck was born in Plainview, Minnesota, on July 24, 1882, the son of Wealthy Evans Hallenbeck and George A. Hallenbeck. He attended Northwestern University, from which he received the degree of doctor of medicine in 1908, and from 1908 to 1910 he was an intern in the Wesley Memorial Hospital in Chicago. He established a general practice of medicine in Goodhue, Minnesota, in 1910, and he carried on this practice for three years.

Dr. Hallenbeck came to Rochester, Minnesota, on July 1, 1913, at the invitation of the late Dr. William J. Mayo and Dr. Charles H. Mayo, to become a consultant in medicine of the Mayo Clinic. One of his duties was the post-operative care of patients who had undergone surgical operations, and this he did until 1915.

On June 1, 1915, Dr. Hallenbeck became an assistant in general diagnosis in the section of medicine headed by Dr. Herbert Z. Giffin and on August 1, 1917, he became head of a section of medicine of his own. He occupied this post until July 1, 1941, when he became a senior consultant. He retired from the active practice of medicine on October 1, 1949, and with Mrs. Hallenbeck moved to La Jolla, California, in October, 1955. They returned to Rochester in December, 1958.

Dr. Hallenbeck was appointed an instructor in medicine in the Mayo Foundation, Graduate School, University of Minnesota, in 1918, and he was advanced to assistant professor in 1921. For some years, in addition to his work in general diagnosis, he was charged with the responsibility for the initial care and diagnosis of the patients coming to the Mayo Clinic in emergency states.

In 1951 the Board of Regents of the University of Minnesota presented a certificate of merit to Dr. Hallenbeck in appreciation of the "splendid years of service given to the University" by Dr. Hallenbeck as a member of the faculty of the Graduate School.

Dr. Hallenbeck was certified as a specialist in internal medicine in 1937 by the American Board of Internal Medicine, Inc. He was a member of the Southern Minnesota Medical Association, the Alumni Association of the Mayo Foundation, the Alpha Omega Alpha medical honor society, the Zumbro Valley Medical Society, the American Medical Association and an Associate member of the Minnesota State Medical Association.

He is survived by his wife, Bessie, Rochester; two sons, Dr. George A., Rochester, and Dr. Dorr F., Jr., Concord, Massachusetts; three sisters, Mrs. Gertrude Watterston, Burbank, California, Mrs. Inez Welch, Burbank, and Mrs. Francis Thompson, Plainview, Minnesota; and three brothers, Vincent, Harold and Robert, all of Burbank, California.

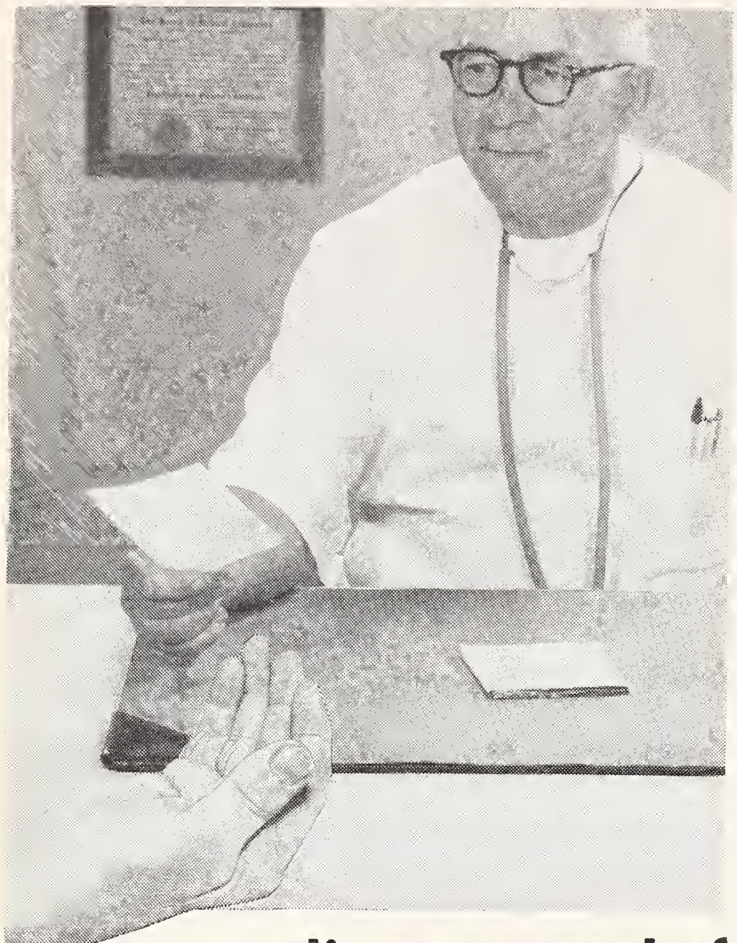
* * *

FRANCIS M. JOLIN

Dr. Francis M. Jolin, Grand Rapids physician, died December 11, 1960, at the age of sixty-one.

Doctor Jolin was born in 1899 at Corona, South Dakota. His preliminary education was obtained at Aberdeen, South Dakota, High School and the University of Minnesota, from which he graduated in the year 1923 with a degree of Bachelor of Science.

His medical education was obtained at the University of Minnesota Medical School from which he graduated in 1931. He served one year internship at St. Mary's Hospital in Duluth, Minnesota. Dr. Jolin started his



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practice in Coleraine in 1932. He was co-founder of the Grand Rapids Clinic in 1950.

He was a veteran of the Medical Corps in World War I, a member of the St. Louis Medical Society, the American Medical Association and an associate member of the Minnesota State Medical Association.

Survivors include his wife, Fannie; a daughter, Dianne; two sons, Tim of Grand Rapids and Robert of Portland, Oregon; two brothers, Dr. R. V. Jolin of Vista, California and Capt. C. L. Bohn, Bethesda Naval Base, Maryland; and a sister, Mrs. E. O. Prather, Alamo, Tennessee.

* * *

WILLIAM J. RYAN

Dr. William J. Ryan, prominent Duluth physician and surgeon, died December 14, 1960 in a Duluth hospital. He was seventy-five years of age at the time of his death.

Dr. Ryan was born in Delafield, Wisconsin, in 1885. He received his preliminary education at Oconomauc High School and at Marquette University. His medical education was obtained at Marquette University from which he graduated in 1913. Dr. Ryan served one year internship at St. Mary's Hospital in Duluth, Minnesota.

Doctor Ryan suffered a stroke December 5, at the conclusion of a rehearsal of the Duluth Doctors Orchestra, which he organized. He was a charter member of the Duluth Symphony Orchestra and played in its violin section continuously until five years ago.

He was a past chief of staff of St. Mary's Hospital, senior member of the Morgan Park Medical Center and a past president of the St. Louis County Medical Society.

Dr. Ryan was director of the St. Margaret Mary Church choir, a member of the Holy Name Society and the Duluth Council of the Knights of Columbus, a past president of the Marquette University Alumni Association, a member of the St. Louis County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Survivors are his three daughters, Mrs. Leonard Kozarek, Duluth, Mrs. John R. O'Connell, Chicago and Mrs. Raymond G. Arimond, Pine City; a brother, Dr John J. Ryan, St. Paul and ten grandchildren.

Woman's Auxiliary

Hennepin

The wives of the physicians attending the Symposium sponsored by the Hennepin County Medical Society, the Hennepin County Chapter of the Minnesota Academy of General Practice and Lederle Laboratories attended a Luncheon for their husbands and themselves in the Hotel Leamington on January 16, 1961. They also attended a 2:30 p.m. session at which Mrs. Evelyn Albinson spoke on "Education in the Soviet Union Today" and the Reception held that evening.

* * *

The American Medical Association film "The Medicine Man" was shown to the general public on January 10, 1961, and to Regional Hospital delegates on January 13, 1961, at the North Memorial Hospital Conference Room in Minneapolis. The event was sponsored by the North Memorial Hospital Auxiliary. General Chairman for this project was Mrs. Fred H. Wolter, Minneapolis, an active member of the Hennepin County Medical Auxiliary.

* * *

Mrs. Walter P. Gardner, St. Paul, President of the State Auxiliary presented the trophies to the Radio Essay Contest winners. The event is sponsored annually by the Woman's Auxiliary to the Minnesota State Medical Association and the Minnesota Tuberculosis and Health Association.

Meetings and Announcements

INTERNATIONAL

The Fourth International Conference on Medical Electronics combined with The Fourteenth Annual Conference on Electrical Techniques in Medicine and Biology, sponsored by: The Joint Executive Committee on Medicine and Biology . . . IRE-AIEE-ISA; Under the auspices of The International Federation for Medical Electronics and Organized by the Institute of Radio Engineers through its Professional Group on Bio-Medical Electronics, The Waldorf-Astoria, New York City, New York, July 16-21, 1961. For further information write to the Fourth International Conference, Institute of Radio Engineers, 1 East 79th Street, New York, New York.

* * *

NATIONAL

The American College of Surgeons will hold the last of its four 1961 Sectional Meetings in Winnipeg, Manitoba, Canada, at the Fort Garry Hotel, April 6-8, 1961. Additional information about program and registration may be obtained by writing to William E. Adams, M.D., Secretary, American College of Surgeons, 40 East Erie Street, Chicago 11, Illinois.

* * *

The Chicago Ophthalmological Society, Annual Clinical Conference, Drake Hotel, Chicago, Illinois, May 19-20, 1961. For further information write Mrs. Mary E. Ryan, 1150 North Lorel Avenue, Chicago 51, Illinois.

* * *

The West Virginia Academy of Ophthalmology and Otolaryngology, Fourteenth Annual Spring Meeting, Greenbrier Hotel, White Sulphur Springs, West Virginia, April 6-8, 1961. For further information write Dr. Worthy W. McKinney, 109 East Main Street, Beckley, West Virginia.

* * *

The Annual Meeting of the American Society of Psychosomatic Dentistry and Medicine, Shoreham Hotel, Washington, D.C., March 10-12, 1961. For further information write Dr. Jesse Caden, Chairman, Program Committee, 5213 Connecticut Avenue, N.W., Washington 15, D.C.

* * *

A five-day full-time course on Surgery of the Hand will be offered by the New York University Medical Center, March 6-11, 1961. The class is limited to forty participants and the tuition is $125. For applications communicate with the office of the Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

* * *

American College of Allergists Graduate Instructional Course and Seventeenth Annual Congress, March 12-17, 1961, the Statler Hilton, Dallas, Texas. For information, write John D. Gillaspie, M.D., Treasurer, 2141 14th Street, Boulder, Colorado.

* * *

The Gill Memorial Eye, Ear and Throat Hospital of Roanoke, Virginia, will hold its Thirty-Fourth Annual Spring Congress in Ophthalmology and Otolaryngology and Allied Specialties, April 10-15, 1961.

LOCAL

Medical Continuation Courses to be presented at the Center for Continuation Study, University of Minnesota. March 13-15, Allergy for General Physicians and Specialists; March 17-18, Trauma for General Physicians; April 17-19, Internal Medicine for Internists; April 20-22, Otolaryngology for General Physicians; and May 11-13, Surgery for Surgeons. For further information write to Director, Department of Continuation Medical Education, 1342 Mayo Memorial, University of Minnesota, Minneapolis 14, Minnesota.

* * *

IMMUNIZATION OF PREGNANT WOMEN AGAINST ASIATIC INFLUENZA URGED

Six deaths of pregnant women have occurred in the State so far last year from Asiatic influenza.

The Maternal Mortality Study Committee agreed at its meeting on November 20, 1960, that this sudden increase in maternal mortality from a single cause was important enough to call it to the attention of all physicians in the State who care for pregnant women and to urge strongly that all pregnant women be given immunization doses of polyvalent influenza vaccine.

A recent bulletin of the United States Department of Health, Education and Welfare also advises immunization of pregnant women as well as those individuals having chronic cardiac or pulmonary diseases and those in the age group of sixty-five years or older.

A change in the spacing of the two doses of one cc. each of the vaccine from three weeks to two months is advised in this bulletin because of the higher titre of immune bodies obtained with the longer interval between doses.

There is some difference of opinion in the case of pregnant women as to whether the shorter interval between doses still might not be more desirable. A choice of interval should be left to the discretion of the individual physician.

It was the consensus of the Committee that immunization against Asiatic influenza is as important to pregnant women as immunization against poliomyelitis.

JAMES J. SWENDSON, M.D., Chairman

Committee on Maternal Health

* * *

N.A.M.E. RECEIVES CONTRIBUTION

At its annual meeting held at the Curtis Hotel, November 19-20, 1960, the Minnesota State Obstetrical and Gynecological Society voted a contribution for the new medical school in St. Paul.

The specialty society also adopted a resolution of appreciation for the Northern Association for Medical Education in recognition of its efforts to develop the medical school.

The text of the resolution is as follows: "The Minnesota Obstetrical and Gynecological Society herewith contributes $100.00 to N.A.M.E., A group of 465 physicians in the mid-west dedicated to the establishment of a new medical school in St. Paul."

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FELLOWSHIPS ARE ANNOUNCED

Six additional Fellowships for Residents in Ophthalmology, to be awarded July 1, 1961, have been announced by the Guild of Prescription Opticians of America, Inc., through its President, William T. Heimlich, of Ithaca, New York. Applications for these Fellowships must be received by May 15, 1961.

Each fellowship is for a total of $1,800, payable in monthly stipends over the period of a three-year residency. The grants are limited to residencies at approved institutions where full three-year residencies are offered, but residencies which begin any time during the calendar year are eligible. Application forms and covering information are available by writing to Fellowships, Guild of Prescription Opticians of America, Inc., 110 East 23rd Street, New York 10, N.Y.

The six new Fellowships being granted represent one for each of the six areas into which the United States and Canada have been divided upon the basis of a nearly-equal number of eligible residencies in each area.

The Guild provides all Fellowship funds as well as the program's cost of administration but the selection of the resident fellow is made by a Committee of Ophthalmologists in each area.

* * *

SYPHILIS CASES

From 1953 to 1958 in Minnesota the number of cases of primary, secondary and early latent syphilis reported to the state health department remained at a constant low level, from 35 to 49 cases annually. Since 1958, however, the number of primary and secondary cases more than doubled, from 20 in 1958, to 46 in 1959, and 49 by the end of October, 1960; early latent case reports increased slightly.

To assist physicians in dealing with this problem the Minnesota Department of Health has available upon request an excellent, concise booklet, "Syphilis, Modern Diagnosis and Management," published in 1960 by the United States Public Health Service. This monograph is direct and to the point on diagnosis, treatment, and follow-up; it discusses significance of serological tests, and contains a series of excellent color photographs.

The book will be made available to physicians who are interested and who request copies. The health department likewise would welcome the opportunity to be present at hospital or clinic staff educational sessions when syphilis cases are being presented, in order to offer the book to interested physicians, and to discuss the health department's concern with venereal disease problems.

D. S. FLEMING, M. D.,
Director Division of Disease Prevention and Control.

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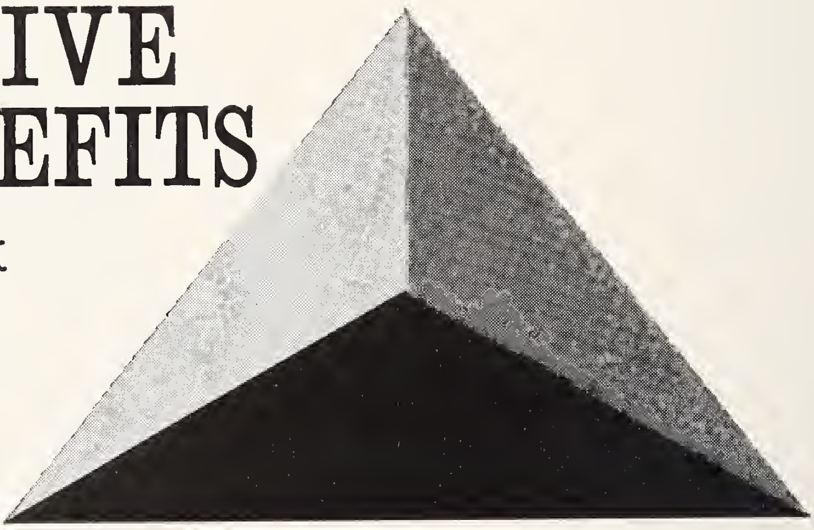

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The Physician's Diary

Dr. S. E. Silvis, who has been practicing medicine in partnership with **Dr. Norbert O'Keefe** in Spring Valley since 1956 has left to take a residency at Veterans Hospital in Minneapolis. His residency is in internal medicine. Dr. Silvis and Dr. O'Keefe went to Spring Valley after graduating from the University of Minnesota Medical School.

* * *

A member of the Olmsted Medical Group, **Dr. Mary Pougiales,** has been elected to active fellowship in the American Academy of Ophthalmology and Otolaryngology at the Sixty-Fifth Annual Meeting of the groups. Doctor Pougiales has been an eye specialist with the Medical Group for nearly ten years.

* * *

New officers of the Mayo Clinic are :**Randall G. Sprague, M.D.,** President, succeeding **Dr. Charles A. Owen, Jr.**; **Edgar A. Hines, Jr., M.D.,** Vice President; **Laurentius O. Underdahl, M.D.,** Secretary; **Lyle A. Weed, M.D.,** First Councillor at Large and **Robert R. Kierland, M.D.,** Second Councillor at Large.

* * *

Gilbert and the surrounding area residents called on **Dr.** and Mrs. **M. L. Strathern** to honor them on their golden wedding anniversary. The Stratherns were married on Thanksgiving day, November 24, 1910 in Ishpeming, Michigan.

* * *

The St. Paul Area Girl Scout Council recently held a dinner to honor those who founded Girl Scouting in St. Paul. Among those honored was **Dr. Lillian Nye.** Doctor Nye has been very active in this respect since 1923.

* * *

At a recent meeting of the East Central Medical Society held at the Cambridge State School and Hospital, **Doctor Ralph Silas,** internist from Minneapolis spoke on "Coronary Heart Disease."

* * *

Dr. Erick Reeber, formerly of the Thief River Falls Clinic, has opened a practice of medicine in the Clinic in Frazee, Minnesota. Dr. Reeber is a graduate of the medical school in Brooklyn, New York and spent two years in the Navy before moving to Thief River Falls.

* * *

Among four Mayo Clinic staff members who have been elected to the Clinic Board of Directors are **James W. DuShane, M.D., J. M. Stickney, M.D.,** and **O. H. Beahrs, M.D.**

* * *

Albertus F. Dodson, M.D., Brainerd, has been appointed by Morris Hursh, as Chief of the Medical Staff of Brainerd State School and Hospital. Dr. Dodson is Board Certified as a Pediatrician and is also an active member of St. Joseph's Hospital in Brainerd. Other physicians actively serving the medical problems at the Brainerd institution are **Drs. John B. O'Leary, Douglas Johnson, Lester L. Bissinger, R. L. Pedersen** and **William Knoll.**

* * *

Dr. John T. Pewters, Minneapolis, has been named as a member of the Board of Public Welfare to succeed **Dr. E. J. Huenekens,** who resigned. The appointment has been confirmed by the City Council.

Dr. O. C. Bolstad addressed the Mrs. Jaycees at their meeting held in the Pine Edge Hotel in Little Falls. As representative for Morrison County in the organization of a mental health clinic for this area, Dr. Bolstad spoke of the functions of such a center in dealing with the mentally retarded and with others having mental upsets.

* * *

The Owatonna City Hospital medical staff has elected officers for this year. They are: **Curt W. Lundquist, M.D.,** Chief of Staff; **Grant E. Olson, M.D.,** West Concord, Vice President; and **James E. McEnaney, M.D.,** Secretary-Treasurer.

* * *

Dr. Louis A. Buie, Mayo Clinic, has received special commendation for his services as a member of the Judicial Council of the A.M.A. from 1945 to 1960, from the Judicial Council and the House of Delegates. Dr. Buie retired from membership on the Judicial Council in June, 1960. During part of his tenure on that body he was also Chairman of the Council on the Constitution and Bylaws of the A.M.A.

* * *

Three Minneapolis surgeons have spent the total of the last two months in a mission hospital in the jungles of India. **Dr. John K. Grotting** and **Dr.** and Mrs. **John P. Wendland** left Minneapolis December 26, 1960 and spent January doing specialized surgery at Nohulpahari Christian Hospital in Santal Parganas, Bihar, India. **Dr.** and Mrs. **Malvin J. Nydahl** did the same in February. Arrangements were made by **Dr. Kristofer Hagen,** who also spent a three-year term there. Dr. Grotting gave some lectures at the Institute for Post-Graduate and Medical Research in Calcutta. He also addressed the Surgical Association of India at Poona, December 29, 1960. Dr. Wendland was kept busy with eye surgery. Mrs. Wendland put her photographic talents to work in filming hospital and mission work. The three doctors went at their own expense and contributed their services free of charge.

* * *

New officers of the St. Louis County Medical Society include: **Dr. S. N. Litman,** President-Elect; **Dr. Philip N. Bray,** President; and **Dr. John H. Peterson,** out-going President. **Dr. Henry Fisketti** was elected Vice President and **Dr. C. A. Linke,** Secretary-Treasurer. Elected to committees and other posts were: **Drs. G. C. MacRae** and **H. H. Peterson,** delegates, and **Dr. J. J. Coll** and **Dr. J. J. Halbert** alternate delegates to the M.S.M.A. to serve through 1963.

* * *

The Minnesota State Obstetrical and Gynecological Society has elected **Dr. Charles McKenzie,** Minneapolis, President of the group. Other officers named were **Dr. Martin Wallace,** Duluth, Vice President; **Dr. Alex Barno,** Minneapolis, Secretary-Treasurer; and **Dr. Edgar G. Ingalls,** Minneapolis, Assistant Secretary-Treasurer. **Dr. James S. Hunter,** Rochester, was placed on the Board of Governors.

* * *

Dr. Donald J. Ferguson, Surgery Chief of the Minneapolis Veterans Hospital since 1954 has been named Professor of Surgery at the University of Chicago. Dr. Ferguson is known for research in hardening of the lung arteries.

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A former Eveleth resident, **Dr. T. G. Petrick**, became associated with **Dr. Harold H. Joffe** in the practice of pathology in Virginia. His last position was attending pathologist to the Good Samaritan Hospital, Suffern, New York.

* * *

Dr. C. L. Oppegaard, President of the Minnesota State Medical Association from Crookston was among speakers for the Minnesota Academy of Foot Surgeons Convention. Dr. Oppegaard addressed the banquet on Saturday evening. **Dr. L. N. Dale**, Red Lake Falls, received an award of life membership in the academy on behalf of inter-professional relations.

* * *

Dr. Gene Muchow has returned to medical practice with the Austin Clinic after serving two years with the Air Force. He is practicing in the general medicine section. Dr. Muchow was a member of the clinic's staff for three months before entering the Air Force.

* * *

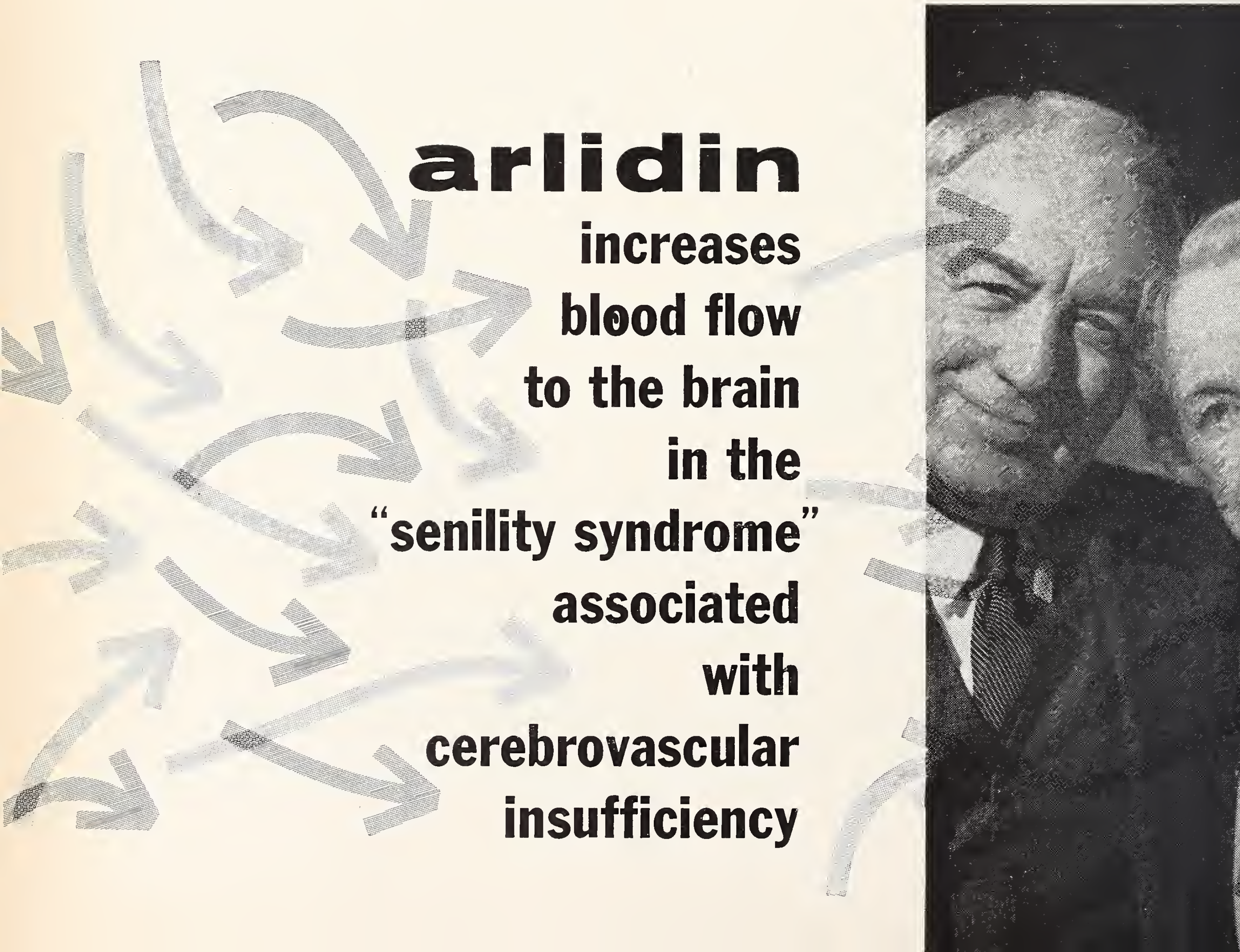
Dr. Owen Wangensteen, University of Minnesota, has been honored with a distinguished service award, the first made possible by special contributions to the Minnesota Medical Foundation. The grant, awarding Dr. Wangensteen $5,000 a year until retirement from the faculty, is for "exemplary achievements in teaching and research as a member of the faculty, and for devotion to the medical school and the University" Dr. Wangensteen is president of the American College of Surgeons and has spent his entire professional lifetime on the University faculty and has gained world-wide recognition for his work.

* * *

Former Jackson physician and surgeon, **Dr. B. N. Karleen**, has moved to Santa Cruz, California where he has joined his brother, Dr. Phillip Karleen and another associate in the practice of medicine.

* * *

Dr. Charles H. Bloom, former North Branch physician and surgeon has opened offices at 5736 Nicollet Avenue, in Minneapolis.



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Dr. William C. Bernstein, University of Minnesota, participated in the post-graduate teaching course sponsored by the San Diego Chapter of the California Academy of General Practice, held in Las Vegas, Nevada.

* * *

Mahnomen physician, **Dr. M. L. Stern,** has closed his practice of medicine there and joined the Cottage Grove Clinic, located in a St. Paul suburb. Dr. Stern had been in Mahnomen since 1956.

* * *

The Worthington Clinic has announced the appointment of **Dr. B. J. Desai** to its staff as a radiologist. Dr. Desai comes to Worthington from St. Paul. Dr. Desai is a native of India and received his medical degree from the University of Bombay. He has three sisters who are doctors in India.

* * *

Dr. Wallace E. Mathews of Mankato has been appointed Blue Earth county deputy coroner succeeding **Dr. G. R. McNear.** Dr. McNear resigned the first of the year due to the press of his work. Dr. Mathews was appointed by coroner **Dr. Roy N. Andrews.** He is associated with **Dr. Robert Engstrom** in the practice of general medicine.

* * *

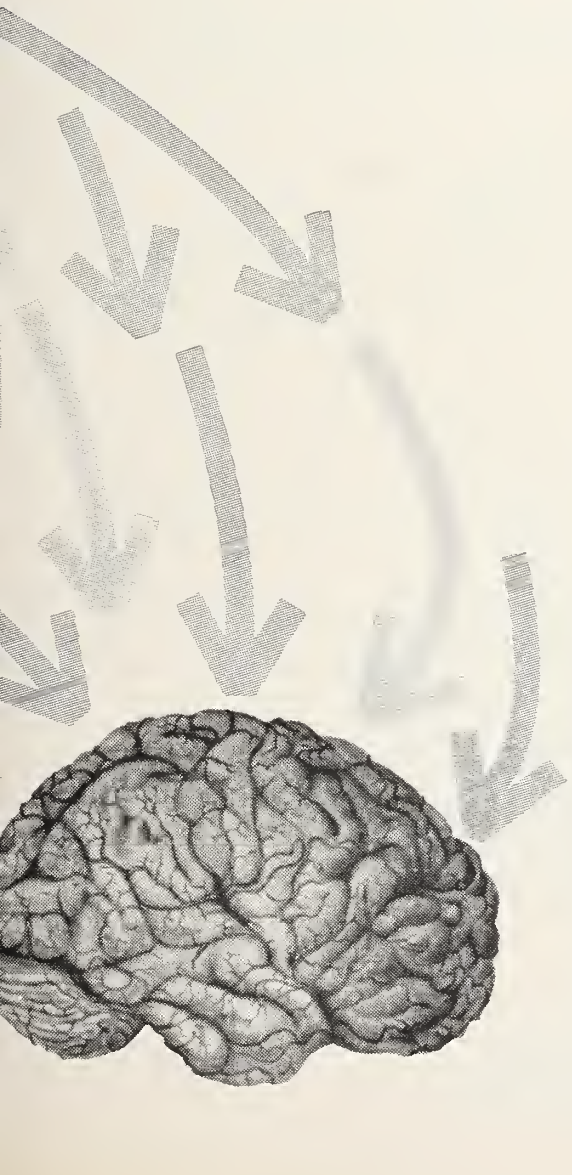
The residents of Stephen, Minnesota have recently completed construction on the new Stephen Medical Center which has recently opened. Dr. Wilf. Pinsonneault, formerly of Winnipeg, is the new resident physician and surgeon.

* * *

Dr. C. J. Mock, Virginia, member of the Lenont-Peterson Clinic attended the combined winter meeting of the Central States Society of Industrial Medicine and Surgery and the Minnesota Academy of Occupational Medicine and Surgery held in Milwaukee, Wisconsin.

* * *

Dr. G. L. Griebe, Brownton, has been appointed McLeod county coroner to fill the unexpired term of **Dr. C. W. Truesdale** of Glencoe. The action was taken by the Board of County Commissioners following receipt of a letter of resignation from Dr. Truesdale.



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references: 1. Madow, L.: Penn. M. J. 62:861, June 1959. 2. Stieglitz, E. J.: Geriatric Medicine, ed. 2, Philadelphia, Saunders, 1949 p. 274. 3. Winsor, T., et al.: Amer. J. Med. Sciences 239:594, May 1960. 4. Eisenberg, S.: ibid, July 1960.

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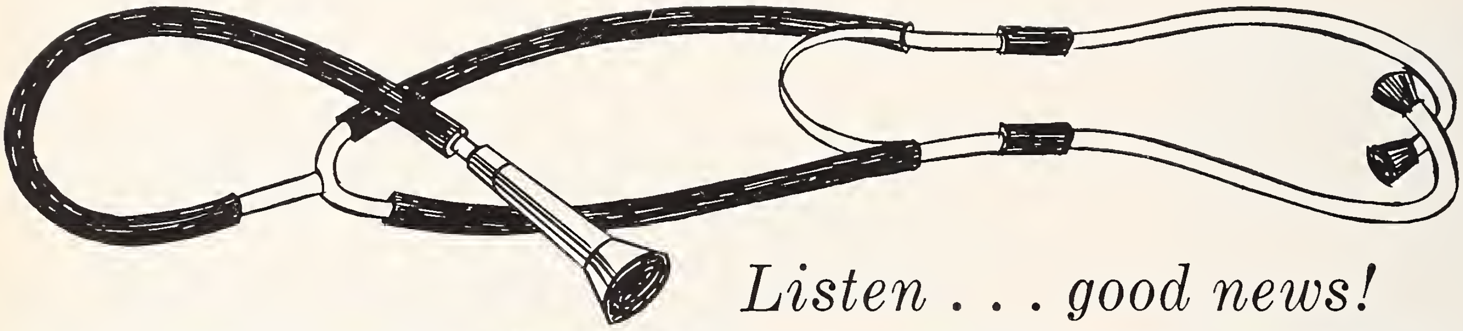

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Contents fo

SCIENTIFIC ARTICLES

ORIGINAL CONTRIBUTIONS

Treatment of Acute Renal Failure
Eugene F. Bernstein, M.D., Robert K. Ausman, M.D., John A. Blum, M.D., Raymond C. Bonnabeau, M.D., Raymond C. Doberneck, M.D., George A. Pankey, M.D., Arnold Walder, M.D., Milton P. Reiser, M.D., Minneapolis, Minnesota 89

Problems in the Care of the Aged and Senile
Arthur C. Kerkhof, M.D., Minneapolis, Minnesota 93

A Follow-Up Study of Discharged Patients on Thiopropazate Dihydrochloride (Dartal) Medication
Paula T. Ferrand, M.D., Gordon Peterson, Richard O'Neill, Moose Lake, Minnesota 103

Renal Colic
S. S. Beirstein, M.D., Minneapolis 93

Autogenous Median Neuropathy — Diagnosis and Treatment
Donald W. Mulder, M.D., Rochester, Minnesota 108

SPECIAL ARTICLE

What the Generalist Thinks of the Radiologist
John S. DeTar, M.D. 112

Abstracts and Briefs 120

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Medicine

arch, 1961

Volume 44
Number 3

MISCELLANEOUS ARTICLES

PRESIDENT'S LETTER 122

EDITORIALS

Emotional Factors in Coronary Occlusion
Barney M. Dlin, M.D., Philadelphia, Pennsylvania 124

Informing Patients Regarding Hypochondriacal Complaints
Ivan W. Sletten, M.D., Minneapolis, Minnesota 125

SPECIAL HOUSE OF DELEGATES MEETING REVIEWED 127

MEDICAL ECONOMICS

Kennedy Administration Eldercare Trends Outlined 129

THE ART OF MEDICINE 131

MINNESOTA BLUE SHIELD A-45

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS A-47

IN MEMORIAM A-53

WOMEN'S AUXILIARY A-57

MEETINGS AND ANNOUNCEMENTS A-59

THE PHYSICIANS DIARY A-61

CLASSIFIED ADVERTISING A-64

INDEX TO ADVERTISERS A-65

Minn. Society of Internal Medicine
Minn. Society of Neurol. & Psych.
Minn. State Med. Association
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Treatment of ACUTE RENAL FAILURE

To all physicians! Watch your patients closely for early signs of renal failure; this informative discussion teaches you what to look for in the early stages of the problem. The concept of management of patients with renal failure utilizing the artificial kidney has changed during recent months and it is imperative that the patient be placed under the care of an artificial kidney team before severe deteriorization takes place. Repeated dialyses appear to increase the salvage in this difficult problem. Cooperation between you and the artificial kidney team may save your patient's life.

Experience of the artificial kidney team at the University of Minnesota Hospitals in 1959

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ACUTE RENAL FAILURE is a frequent complication of extensive trauma, crush injuries, prolonged major operations, abruptio placentae, exposure to nephrotoxic substances, incompatible blood transfusions, and shock. Particularly in the postoperative or post-traumatic individual it has been associated with a very high mortality. The prognosis is worse when (1) it is diagnosed late, (2) the physician is unfamiliar with its management or (3) equipment for dialysis or peritoneal lavage is either inadequate or improperly used.

For treatment to be effective, early diagnosis of acute renal failure is imperative. Early diagnosis depends upon an accurate record of hourly urine output, with frequent measurements of specific gravity. Such determinations do not demand skilled personnel. In the absence of glycosuria and severe albuminuria, a high specific gravity and a low urine volume indicate dehydration rather than renal failure due to tubular damage. With few exceptions, the oliguria of acute renal failure is characterized by hypo or isosthenuria, a decrease in the osmolality of the urine, and a decrease in the excretion of nitrogenous substances. Once the diagnosis is established, treatment is aimed at keeping the patient alive until his kidneys can recover. Time will tell whether the lesion is irreversible.

During 1959, 38 patients with acute renal failure were treated by the Artificial Kidney

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This work has been supported in part by the Variety Club of the Northwest.

Team at the University of Minnesota Hospitals. They represent the largest annual series treated at this institution since the establishment of an Artificial Kidney Team in 1949. This experience has resulted in the development of certain principles of diagnosis and treatment, which, although not peculiar to our group, have increased the survival rate. This report will briefly review the salient features of the treatment of acute renal failure and will summarize the results of our experience during 1959.

Treatment of Acute Renal Failure

1. Anuric Phase

In patients who are not grossly overhydrated or edematous, an early trial of rapid hydration, infusing a liter of five percent dextrose in distilled water intravenously over a period of 30 to 45 minutes and simultaneously recording urine volumes and specific gravities will help determine the degree of hydration of the patient. If the specific gravity of the urine decreases and its volume increases, the patient was dehydrated. In these dehydrated patients the circulating blood volume must be restored to normal promptly.

Obstructive anuria should be ruled out by catheterization of the bladder and both renal pelves. A unilateral pyelogram using three to four milliliters of contrast agent may be helpful in determining the cause of acute renal failure.

Once the diagnosis is established, prophylactic isolation is instituted, since most fatalities in these individuals are associated with intercurrent infection. Prophylactic antibiotics are not indicated; their good is often outweighed by their complications, in particular the development of resistant organisms, which leads to serious late-septic complications. Streptomycin is specifically contraindicated because it is not excreted by the anuric kidney and will rapidly accumulate to toxic levels.

The daily fluid intake should equal the total output (urine, diarrhea, emesis, gastric suction) plus four to five hundred milliliters (the replaceable insensible loss). If profuse sweating occurs or the patient is febrile, the fluid intake should be increased.

The patient should be weighed once or preferably twice a day on the same scale by the same individual. A weight loss of one-half to one pound is to be expected with proper management; no weight loss means over-hydration, one of the gravest problems confronting the physician.

Rigid restriction of fluid intake limits the caloric intake and its protein-sparing effect. Since more calories per unit volume can be given orally than intravenously, the oral route is preferable. Suitable oral solutions include 50 to 80 percent dextrose, popsicles of the same dextrose concentration, Contralyte, Lipomul, butterballs, and Karo syrup with ginger ale. Twenty percent dextrose in distilled water can be given intravenously through a catheter which is inserted into the superior vena cava. Unless dialyses are being performed daily or are continuous, the diet should contain only carbohydrate and fat; potassium and protein are contraindicated.

Potassium intoxication, as evidenced by electrocardiographic changes and hyperkalemia, is a serious and frequently lethal complication. Clinically, muscular weakness and decreased reflexes are noted. Digitalis and calcium may mask the electrocardiographic changes, while hypocalcemia, hyponatremia and acidosis tend to aggravate the toxic effect of hyperkalemia. The best treatment is the early prophylactic oral or rectal administration of ion exchange resins. Hypertonic glucose and insulin, and intravenous calcium and sodium are but temporary expedients. Gastric suction or lavage, and intestinal and peritoneal lavage are of limited value. Dialysis on the artificial kidney is most effective when necessary. Because potassium intoxication occurs sooner in the post-traumatic and postoperative patient, dialysis must be performed early and more frequently in these patients.

Metabolic acidosis may be corrected by intravenous five percent sodium bicarbonate or molar or 1/6 molar sodium lactate. Calcium should be given intravenously prior to the alkalinizing solution to prevent tetany.

2. Diuretic Phase

When the 24-hour urine volume reaches 1500 cc. the diuretic phase is established. Twenty-five percent of deaths occur at this time; seventy-five percent occur during the anuric phase. In several patients with irreversible renal lesions the daily urine volume increased slowly to six or seven hundred milliliters, but no higher. This volume proved insufficient to permit recovery.

Fluids should not be forced to promote a marked diuresis, for then large quantities of electrolytes may be lost and their replacement made difficult. If possible the fluid intake should lag six to eight hours behind the urine volume. The measurement of the daily urinary excretion of sodium, potassium and chloride is helpful in determining the electrolyte replacement. Prophylactic isolation and dietary restrictions may be discontinued. However, despite diuresis, the blood urea nitrogen may continue to rise for several days. For this reason, protein intake should be limited until the blood urea nitrogen level has begun a definite downward trend and is below 100 mgm%.

3. Recovery Phase

Recovery of renal function is gradual, may take weeks or months, and may or may not be complete. During this period there is an anemia (that need only be treated by oral administration of iron) an intermittent edema, and a migratory arthritis, the latter probably due to hyperuricemia.

Summary of Experience in 1959

During 1959, thirty-eight patients with acute renal failure were treated by the Artificial Kidney Team at the University of Minnesota Hospitals. The age and sex distribution is illustrated in Table I. The cause of acute renal failure is classified in Table II. Almost 80 percent of these patients were either postoperative or post-traumatic, a group in which the mortality is highest.

TABLE I

Age and Sex Distribution and End-Result in 38 Patients with Acute Renal Failure

Age	Male	Female
0-9	2 (1)	3
10-19	3 (2)	0
20-29	3 (1)	0
30-39	2	1 (1)
40-49	3	4 (1)
50-59	5 (1)	2 (1)
60-69	4	2 (1)
70-79	1 (1)	3
80-99	1	0

Figures in parentheses indicate the number of survivors.

TABLE II

		Total Patients	Number Surviving
Group I	— Postpartum	1	1
II	— Fibrinoid Disease	2	0
III	— Toxins	4	2
IV	— Postoperative and Trauma	30	7
V	— Undetermined	1	0
		38	10

Twenty-three patients underwent forty-five dialyses. Six survivors, who had a total of twelve dialyses, are listed in Table III. In adults the usual duration of dialysis employing the Travenol Twin Coil Kidney was six hours. However, in some cases the length of dialysis was increased to eight hours if the patients were obese, the blood urea nitrogen was more than 200 milligrams percent, or the acute renal failure followed an operation or trauma. Only one coil was used for three to five hours in children. Usually the radial artery and the basilic or saphenous vein were cannulated. More recently inlying catheters, especially in the vein have been used for several dialyses. During the last few dialyses a venous well has been incorporated into the circuit to measure flow rate.

TABLE III

Dialysis Survivors—1959

	Age	Etiology	Dialyses	Oliguria (days)	Follow-up
1. J.M.	57	Electric Shock	2	31	Living and well, 1 year
2. L.O.	65	Surgery (colon)	1	11	Living and well, 7 mos.
3. W.L.	70	Surgery (TUR)	3	21	Living and well, 6 mos.
4. R.T.	10	Surgery (bypass)	2	16	Living and well, 1 year
5. H.B.	54	Surgery (lung)	2	12	Expired, tumor recurrence, 1 month following discharge.
6. K.S.	21	Accident	2	8	Living and well, 8 mos.

A number of the patients who were not dialyzed were moribund when first examined, or had such a severe bleeding diathesis that heparinization was contraindicated. In several instances, the physician in charge would not permit dialysis. It is essential that physicians with experience in treating renal failure have complete responsibility for the management of these patients, since considerable experience is necessary in deciding when dialysis is indicated. For this reason, the early transfer of patients to a renal failure center is urgent.

In Table IV are listed the causes of death among the twenty-eight patients who succumbed. Sepsis secondary to the cause of the acute renal failure resulted in six deaths, and cardiac disease or the complications of cardiac surgery resulted in five more. At least two patients had irreversible renal or central nervous system lesions, one with bilateral renal vein thrombosis, and the other with ethylene glycol poisoning.

TABLE IV

Cause of Death in 28 Patients with Acute Renal Failure

1. Renal failure and its complications		16
a. Uncontrolled uremia	4	
b. Septicemia	3	
c. Pneumonia	2	
d. Uncontrollable bleeding	2	
e. Post-open heart surgery with uremic complications	2	
f. Acute post-op. pancreatitis	1	
g. Ethylene glycol intoxication	1	
h. Thrombosis of renal artery	1	
2. Cardiac disease (includes complications of open heart surgery, but NOT those secondary to uremia)		6
3. Sepsis (secondary to primary injury or disease, but NOT secondary to uremia)		5
4. Crush injury to multiple organs		1
		28

Discussion

Current concepts of the management of acute renal failure emphasize the need for early and frequent dialyses. Within several days of the onset of the anuria or oliguria, the patient should be transferred to an Artificial Kidney Center where properly trained personnel and adequate facilities are available. Procrastination or undue delay frequently results in the death of the patient in transit, in the emergency room, or while being attached to the artificial kidney.

Recently, considerable effort has been directed toward preventing the onset of the uremic syndrome in the anuric patient. Teschan[1] and Scribner[2] have utilized daily and continuous dialysis regimens in an effort to prevent the late complications of uremia-sepsis, bleeding, shock, acidosis and convulsions. To date, their results have been encouraging. However, considerably more work will be necessary before the value of these techniques in lowering the mortality of acute renal failure can be evaluated.

At present, the indications for dialysis at this clinic have been modified only slightly from those previously reported,[3,4] in that earlier and more frequent dialysis has appeared beneficial. Current indications include: (1) a blood urea nitrogen of 120-150 milligrams percent; (2) an acidosis (carbon dioxide combining power below 14 mEq/1; (3) a serum potassium of 7 mEq/1; (4) overhydration; and (5) general clinical deterioration.

The large group of patients in this series who developed acute renal failure following sepsis, extensive resections for neoplastic disease, and open heart surgery for complicated intracardiac lesions has weighted the series unfavorably. However, a successful end-result in such patients is particularly gratifying.

Sepsis has continued to be a major cause of death, re-emphasizing the need for prophylactic isolation, judicious employment of antibiotics, and meticulous attention to details of aseptic technic during dialysis and in the care of local wounds.

Summary

The development of acute renal failure is ominous, especially in the post-operative or post-traumatic individual. Suggestions have been made as to its prompt recognition. Salient features in its treatment have been reviewed, and the more common complications have been mentioned. It must be emphasized that after three or four days, and in some instances sooner, such patients should be transferred to an Artificial Kidney Center.

The artificial kidney must be considered an important adjunct in the management of acute renal failure and not a measure of last resort. It is of little value in the moribund patient.

Thirty-eight patients treated during 1959 have been presented and discussed.

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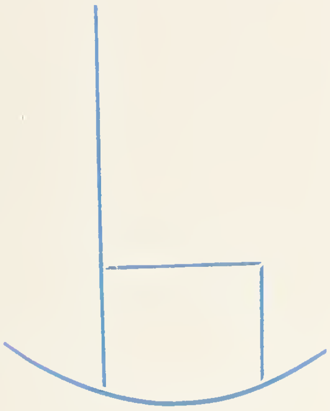
PROBLEMS in the Care of THE AGED AND SENILE



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THE CONSTANTLY increasing average length of life of the American population poses many medical and ethical problems for the conscientious and competent physician. More and more the practicing physician discovers that an increasing percentage of his patients are in the upper decades of life, the so-called "autumn years;" 60 or more years. This changing composition of the average physician's case load means every physician should take a clear and careful look at the older patient.

Speaking from the physical and therapeutic side first, there are many differences between the care of individuals in the older age group and those in the younger age group. It is impractical to discuss the many areas of difference involving different medical approaches in the two age groups. Hence, comments will be confined to the aged patient, and some suggested therapeutic approaches.

The major causes of death in this older age stem from the cardiovascular system, the genitourinary system, and the field of malignancy. Treatment of cardiovascular conditions in the older age group differs considerably from treatment of the younger individuals. For example, atrial fibrillation is a frequent finding in elderly individuals, and often when it occurs there is already sufficient sclerosis of the arteries of the septum so that the block between the atria and ventricles is much more marked than it is when it occurs earlier in life. Under these circumstances, many older individuals have ventricular rates in the 70's before any digitalis is given. In younger individuals the digitalis dose in an atrial fibrillation can be regulated positively and precisely by arranging the dose so that the ventricular rate will be approximately 65 to 75 when the atria are fibrillating. This constitutes adequate digitalis in that group of individuals. In the older group, however, with a slower ventricular rate, digitalis dosage cannot be entirely determined by the rate of the ventricle alone. Because of this, digitalization of the aged becomes a much more complex and difficult problem. In addition to this disadvantage, older individuals do not generally tolerate massive doses of digitalis as well as younger persons. Most younger persons will be satisfactorily maintained on one cat unit of digitalis a day, but members of the older group find this dose is too strong and become intoxicated. It becomes a problem of acute medical judgment to properly determine the digitalizing and maintenance dose in individuals of advanced years. One must proceed with even greater caution than usual and build the dosage up fairly slowly, while carefully watching for toxic signs. Even though digitalization may not be reached in the case of atrial fibrillation in this group of individuals it is necessary to see that the ventricular rate does not fall below

60 a minute. As soon as the rate falls below this, cardiac function is decreased and, therefore, the use of digitalis fails to serve its purpose. For those patients with regular rhythm, the best test of adequate digitalization is to approach toxic signs and then back down gradually. On the average, it will be found that a 150-pound older individual will require approximately 5 cat units a week instead of 7 cat units a week for maintenance. The patient is instructed to take digitalis every day except Wednesday and Sunday and if he stays on this schedule, he will do well.

Hypertension is common in older men and women. It is usually a systolic hypertension and not a diastolic hypertension. Generalized arteriosclerosis in the larger blood vessels causes the vessels to become very rigid so that even though primary hypertension does not exist, the systolic value will rise because of the thrust of blood into these rigid tubes and the diastolic pressure will fall rapidly to normal because there is decreased elasticity in the arteries. Under these circumstances, one should take a critical look at hypertension seen in these individuals. Certainly systolic values of 180 with diastolic values of 80 are not alarming, but should the systolic value exceed 200 mm Hg., then one could consider this as hypertension even though the diastolic pressure may only be 90 mm Hg. It is vitally important not to attempt to reduce these blood pressure values down to those which we would ordinarily consider normal because reduction of blood pressure from 220 down to 160 or 150 in these persons produces vascular insufficiency since these individuals have been well accustomed to this blood pressure over a long period of time and have adjusted to it. One sees many aged individuals whose blood pressure has been dropped too low whereupon cerebral insufficiency occurred with resultant confusion and severe symptoms. The treatment of hypertension in this age group requires the careful use of the very mildest forms of antihypertensive drugs. The more drastic forms of therapy, such as the ganglionic blocking agents, should be used very rarely, if at all.

The incidence of coronary disease in these individuals is extremely high, and certainly over the age of 70 the incidence must be at least 90 to 95 percent. On the other hand, this disease, because of its insidious onset, proves to be fairly benign because during the long period of time it has existed, collateral circulation has apparently developed to the point where the myocardium does receive adequate blood flow despite the fact that there may be very marked narrowing of coronary arteries. In addition, older persons are not so active as they were in their younger years and do not require the coronary circulation which younger and more active persons require. Coronary thrombosis occurs very frequently in these older individuals and many times will go along unnoticed because the minor differences between the marked narrowing already present and the actual closure of the artery makes very little difference in the nourishment of the myocardium so that there are no real symptoms present. One commonly sees fresh coronary thrombosis at autopsy in the older patients and yet no symptoms have been present to indicate this condition. It can be said with certainty that similarly in the brain the process of becoming older and senile is a process of continually increasing inadequacy of circulation to the cerebrum. Many elderly individuals will have many many small cerebrovascular accidents which are very fleeting in nature. These accidents do not necessarily produce paralyses but do produce temporary confusion, slight fever, nausea, and are many times interpreted as being mild infections.

The use of Dicumarol and other anticoagulant drugs in this group of individuals must be carried out circumspectly and with considerable discretion. For some yet unknown reason older persons respond much more violently to the anticoagulants and are much more difficult to control, particularly in the early stages of treatment. When one finally establishes an older patient on a good base maintenance dose, it seems the drugs can be safely used with adequate results.

Diabetes occurs frequently in older age groups. This kind of diabetes usually starts after 40, and is not to be confused with the more serious type of diabetes seen in younger individuals. The older diabetic does not require the prompt vigorous treatment of the disease following the presence of some infection as one would do in others. These elderly individuals rarely proceed into diabetic coma, so the threat of coma should not unduly worry us or precipitate us into rapid and strong medical measures. Most older diabetics can be handled well with the oral insulin preparations and very few of them will require hypodermic insulin. Should an infection occur, diabetes should be treated a little more vigorously and at that time the regular or long-acting forms of insulin may be used in an attempt to reduce the blood sugar and make the treatment of the infection easier. Dietary control is difficult with these people for it is difficult for them to understand the diabetic values, and hard for them to understand why their traditional diet which sustained them all these years should now be prohibited.

Pneumonia is a common disease in this group. It may be treated as it would be treated in younger individuals, the only difference being that early ambulation is much more imperative with the older person than in other age groups.

Sedation is difficult in the aged. Barbiturates are generally not well tolerated. They cause considerable confusion and delirium and are not to be recommended. Chloral hydrate, either in liquid or capsule form serves well. This drug seems to work well with them and does not cause the mental aberration and depression which has occurred with the barbiturate group. Modern tranquilizing drugs also create difficulties. Older individuals often become extremely bewildered on tranquilizers whereas the same drugs in younger individuals would be very effective and would give a good result. This means we should be extremely cautious in the use of these drugs and avoid their indiscriminate use unless there is a clear and present need.

Malignancy among older persons is a somewhat different disease than in younger individuals. It is not as serious a disease in the older groups as it would be in the younger persons. Lesions are usually quite slow in metastasizing and consequently treatment need not be as vigorous as otherwise indicated. As an illustration, malignancy of the breast in a young female is very serious indeed and requires thorough therapy, usually including radical mastectomy. It is not quite so serious when it occurs in an older female. Even in the younger group of individuals there is some debate as to whether or not radical mastectomy causes much increase in life expectancy over simple mastectomy. In the group of older women, a simple mastectomy, therefore, with appropriate hormone therapy should be sufficient. It can certainly be much less mutilating and therefore, much easier for them to handle during the acute post-operative period. Carcinoma of the gastrointestinal tract, of course, requires adequate resection as it would in any other group.

There is one situation every physician should be constantly aware of, and this involves the acute abdominal condition. They do occur frequently in older individuals and when they occur, their symptoms are often masked. Acute appendicitis is a frequently missed diagnosis in this group and can lead to peritonitis and death without much or any change in white blood count and without any fever. We must remember that an abdominal pain may represent an acute suppurative process even though we do not have the general diagnostic signs that such a process may be present. Following surgery for all of these conditions, it is imperative that these individuals are ambulated as soon as possible. The incidence of postoperative atelectasis is much higher in this group and requires that they be up and moving around and breathing more deeply so that atelectasis will not occur.

There is another important aspect in caring for this group of older individuals to be considered. It is difficult for many of us to realize that our elder citizens have reached a time in life when many of their friends have passed away. When the aged become ill many have a hidden fear that they are experiencing a final illness. This causes them to become greatly perturbed and anxious and this makes it even more difficult for the physician who is treating them. In addition, because of their advanced years, cerebral arteriosclerosis, decreased hearing, and markedly impaired vision, they have less comprehension and knowledge of what is going on about them. They do not understand directions very well. They do not see clearly. They do not hear clearly. They are completely unaccustomed to new surroundings and personal services. For example, they do not adjust easily to hospitalization nor do they like to be under the care of a nurse or aide. These things all tend to make the illness more than it might be otherwise. For the physician, it means he must devote more time into these individuals, that he be patient and thorough in explaining to them the problems involved, and what is happening to them. It is also necessary to explain to them the necessity for the various procedures and tell them what will be accomplished.

Old folks need constant reassurance and encouragement; they need to be made to feel confident that this illness is one from which they can recover (if that is possible) and that you are confidently expecting that they will get well. During the time they are being treated, plans should be suggested to them for the future. I can think of nothing better for their morale and will to live than to help them to make plans ahead — a trip, a visit, a celebration. This is where a positive, wholesome, outgoing approach towards activities several months in the future will bolster their desire to become active and interested again. You must make every honorable and honest effort to let them know you feel they will recover, that they will be able to take an active part in life again, and that they are being both sensible and practical when they plan for the future.

However, there still will come the time when we must finally face the inevitable and from this there can be no escape, nor should we seek an escape. This concerns those aged persons who are so senile they are completely oblivious of their environment. They are merely going through the purely mechanical chores of living and breathing; they eat food because it is handed to them; they evacuate because this is taken care of by some mechanical or medicinal means; their daily life is a dull grey pain-riddled interlude, a twilight zone hovering between life and death. They exist from day to day not knowing what is going on, being of no comfort or consolation to either themselves or their families and friends. In these sad and serious situations a physician must measure up professionally, morally, and ethically to the finest traditions of medicine and face the inevitable. He must be willing enough and humane enough to admit defeat and accept this defeat. Every physician's training is oriented towards the preservation of life through the techniques and tools of his profession. Therefore, to admit defeat and agree that the situation is impossible goes against our instincts, training and education. However, there is a point of ultimate truth eventually reached when even the most sincere and religious physician must ask himself in the awful lonesome recesses of his own soul "To what end are my arts maintaining life?" In this discussion it must be clearly understood that no intimation, suggestion, inference to euthenasia, or any variation thereof, is being made or is any implication of administering a subtle "coup de grace" even considered.

This discussion is reminiscent of a very fine physician, a pious man himself, who told the story about what happened to him at one time. He had a patient in the hospital dying of carcinoma, in constant and acute pain day after day. The physician reached the point when he could not conscientiously force this individual to live any longer so he ordered five grains of morphine intravenously. He left the hospital and went to his office. He said each time the phone rang afterward he jumped with fear.

It became unbearable to wait for the call telling him that this individual had passed away. Finally, some four hours later a phone call from the nurse. She said, "The patient is doing much better. May I repeat the dose?" The man told me that under no conceivable circumstances could he have repeated the prescription. He said, "I couldn't do this again no matter what the situation was." This physician has since passed away with urinary malignancy, the same condition which took the life of the patient he was treating.

This personal example epitomizes our quandary as physicians and persons. Here is really our hour of decision. None of us would be willing to commit an act which terminates life; none of us would prostitute our skills and conscience to this end. On the other hand, we must also realize the continued heroic treatment of individuals of this type can be totally unnecessary and may be totally unjustifiable from religious, economic, and moral standards. I have known situations where families were financially ruined by the extended care given this group of individuals. Intravenous medication, transfusions, multiple drug therapy, and long hospitalization all are very expensive. Many families have been pauperized by an illness to the point where the remaining living members of the deceased's family must be deprived of advantages the person departed would be most insistent on. This maintaining, yet acceptance of the inevitable fact of death — and resignation to it goes against every aspect of our medical-school work. It goes against all the things we have done, believed, and accepted in our practice of medicine. It is the exact opposite of what we hope to do — but is it really?

To all of us this seems to violate our feelings toward human beings and in many cases makes us feel as though we are violating what is legally, religiously, and morally correct.

Again these comments have nothing to do with euthanasia — but apply specifically to the patient bordering on extremes: a physical state medically established beyond any reasonable doubt. The attending physician and his associates are in unanimous agreement — there is no question in anyone's mind as to the prognosis. Everyone connected with the case is perfectly aware that despite all the impressive ministrations science can provide, the patient is still dying, still suffering, still lingering with one hand on the latch of the door of the great beyond. There is no other *treatment* to apply now — *there is no treatment for death!*

Once the attending physician and his associates are in agreement on these matters, the time has arrived for a very frank discussion with the patient's relatives. Rarely will the physician meet with any lack of understanding on the part of these relatives — almost *never* do they wish to have their loved one maintained indefinitely in a tragic mid-zone of more and more suffering, with only death offering surcease from life's struggle.

If the relatives express no desire for "heroic measures" then the final decision is left in the hands of the attending physician(s).

Keep in mind that the law does not require the attending physicians to *resort to extraordinary means* if it can be medically substantiated that only certain death and suffering lie ahead. The decision concerning further treatment should be in terms of the patient's own interests and reasonable wishes and the background provided by a frank discussion with relatives—either expressed or implied.

From this point on proper treatment must include the use of all natural means of preserving life — food, drink, etc., good nursing care and appropriate measures to relieve physical and mental pain — and the opportunity of preparing for death. Since the professional and religious standards of conscientious physicians vary somewhat regarding the use of further means — such as artificial life sustainers — *it should be left entirely to the discretion of the attending physician* to use — or not use such sustaining measures. In general it may be said that he has no legal obligation to use them unless they offer the hope of some real benefit to his patient without imposing a disproportionate inconvenience on others *or* if failure to use such means would reflect unfavorably on the medical profession.

The decision is one that only the attending physician can make.

I can see no religious objection to this position. Most religions hold as a promise to their believers that there is an after life and that the future after life will be better than this present existence on earth. It would seem difficult, therefore, for these religions to say that one must continue to hold a patient in this earthly life and prevent him from entering into what has been promised to be a much better life in the future. One might even go so far as to say that the physician who continues to force this individual to remain alive by artificial means and not let natural causes take their course is actually wronging the individual because he is denying him an entrance into what religious beliefs tell us is a much better existence. The physician should not be required to force an individual to stay alive in a situation where death is inevitable very shortly and that continued living merely increases suffering.

Each of us has the obligation to search his soul in this matter. Being a physician is not merely taking care of writing orders and giving out medications. Being a physician is more than that. It means taking care of and leading an individual through his life to the point where life can no longer exist comfortably for the individual and after that allowing him to go by natural means into his reward.

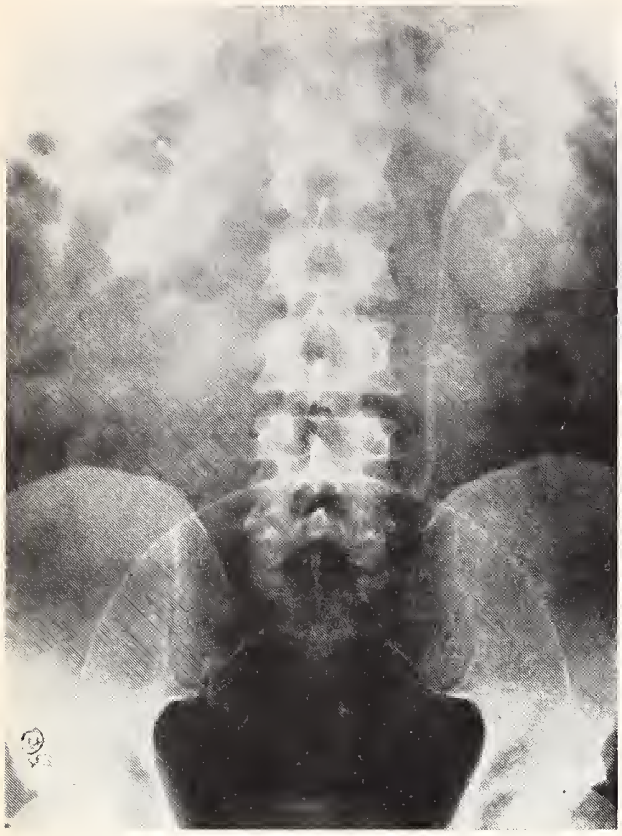

Fig. 1. This film demonstrates obliteration of psoas shadow in a case of chronic pyelonephritis associated with peri-nephritis. There was organization of the perinephric fat.

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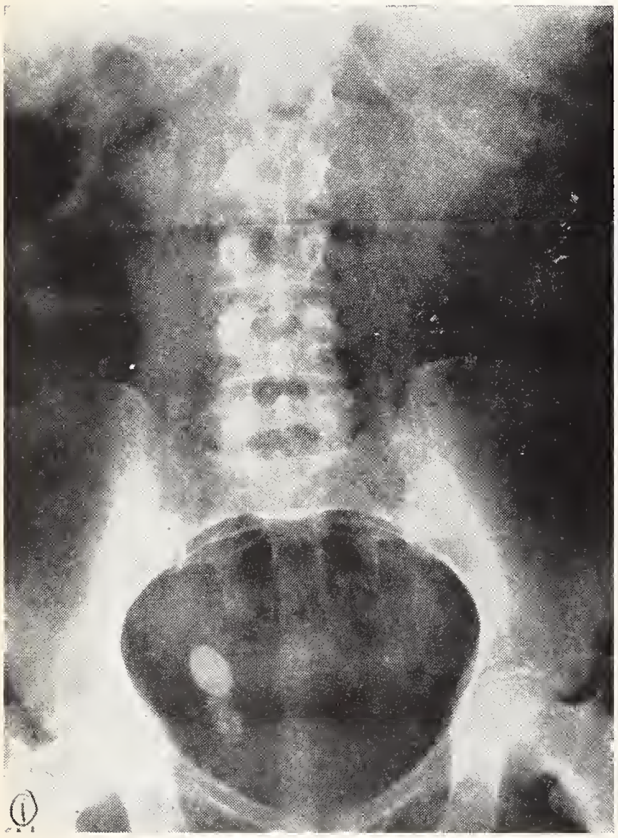

Fig. 2. This patient presented one episode of renal colic one year prior to admission following which the course of his illness followed a pattern of pyelonephritis with intermittent episodes of fever without pyuria.

RENAL COLIC

THE PROBLEM CONFRONTING the physician with a patient suffering severe flank pain is one that requires an immediate diagnostic solution and a definite course of action.

Such pain may originate in the retro-peritoneal area within the urinary tract. However, it may also be referred pain from a source within the abdomen. It is not uncommon to have such pain produced by disease in the gastro-intestinal tract including the liver, gall-bladder, spleen, or pancreas. Occasionally it may result from diaphragmatic inflammation. The vexing problem of a patient with testicular pain during an attack of acute appendicitis is occasionally seen. It is obvious that the nature of referred flank pain involving many vital systems makes immediate diagnosis and treatment imperative.

Many of the sympathetic fibres from the abdominal viscera end in the same segments of the spinal cord as do some of those from the kidney and ureter. To determine whether the pain is renal or ureteral is the first step in differential diagnosis.

Pain of renal origin is usually localized in the flank. This local pain of capsular origin may be accompanied by sharp and excruciating pain radiating towards the umbilicus if the kidney pelvis becomes distended. Classical ureteral colic radiates anteriorly and is referred to the groin, testicle, and inner aspect of the thigh. If the pain in the kidney region is localized and does not radiate, one suspects perirenal pathology, such as abscess, or vascular accidents, namely infarction, or septic embolic processes. The obliteration of the psoas shadow on x-ray suggests the diagnosis of perirenal pathology. Fig. 1.

A true renal colic of calculus origin radiates downward along the course of the ureter. Infrequently it may point towards the shoulder. It may, however, be localized and be very severe. Emphatically, renal colic is not pathognomonic

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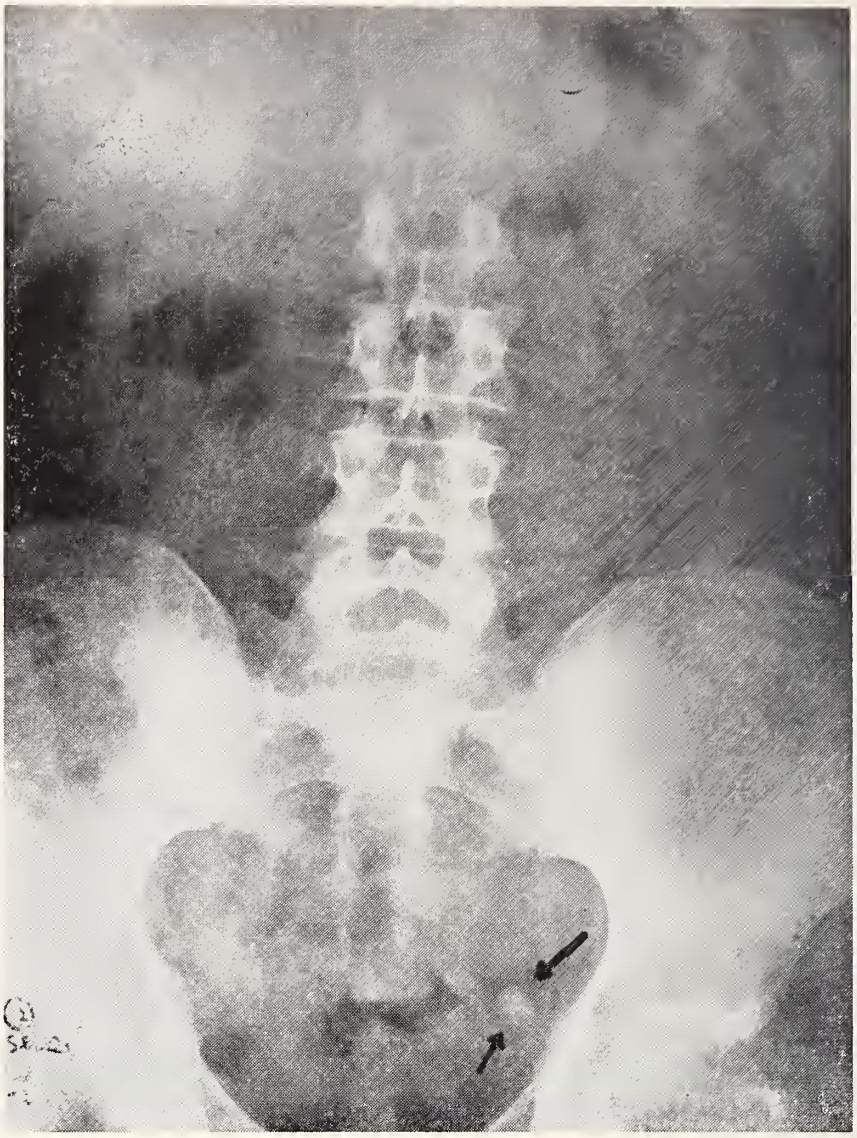

Fig. 3. This film demonstrates a calcium oxalate calculus, non-obstructing. The pain associated with this calculus had been ascribed to diverticulitis and seminal vesiculitis. Uretero-lithotomy relieved the patient of his long standing pain.

of stone. Other renal and intra-abdominal pathology can produce colic. Colic may be produced by any macroscopic mass coursing its way down the ureter, whether it be a blood clot, a conglomerate of purulent material, or even a shower of crystals.

It is of prime importance to give the patient relief from the pain. Morphine in conjunction with an anti-spasmotic such as atropine is generally the effective opiate. If morphine is not tolerated, demerol or pantopan is effective. Additional relief may be obtained with administration of intravenous calcium gluconate. Physiologists cannot give us a reason for its effectiveness, but its clinical help in relieving pain cannot be ignored. Deproponex and octin intramusculary, are also relaxing to the ureter, and potentiate the action of the narcotics. Immersion in a hot tub is helpful during a severe colic.

As soon as it is feasible, a pertinent history is obtained and a physical examination is performed. The latter is not always immediately possible. The examination must include detailed scrutiny of the genitalia, prostatic palpation, preferably in the acute knee-chest position, renal palpation, and a careful appraisal of the urine. Renal function studies and a KUB are done as soon as possible.

The x-ray which reveals a definite opaque shadow in the course of the ureter corresponding to the side where the colic presents, offers no difficulty in substantiating the diagnosis of colic due to stone. Oxalate, carbonate, phosphatic and cystine calculi are relatively radio-opaque in that order. However, pure uric acid stones are well nigh impossible to visualize. If, in addition, the calculus happens to lie over a bony structure such as a transverse progress, a rib, or the bony pelvis, it will then almost certainly be missed.

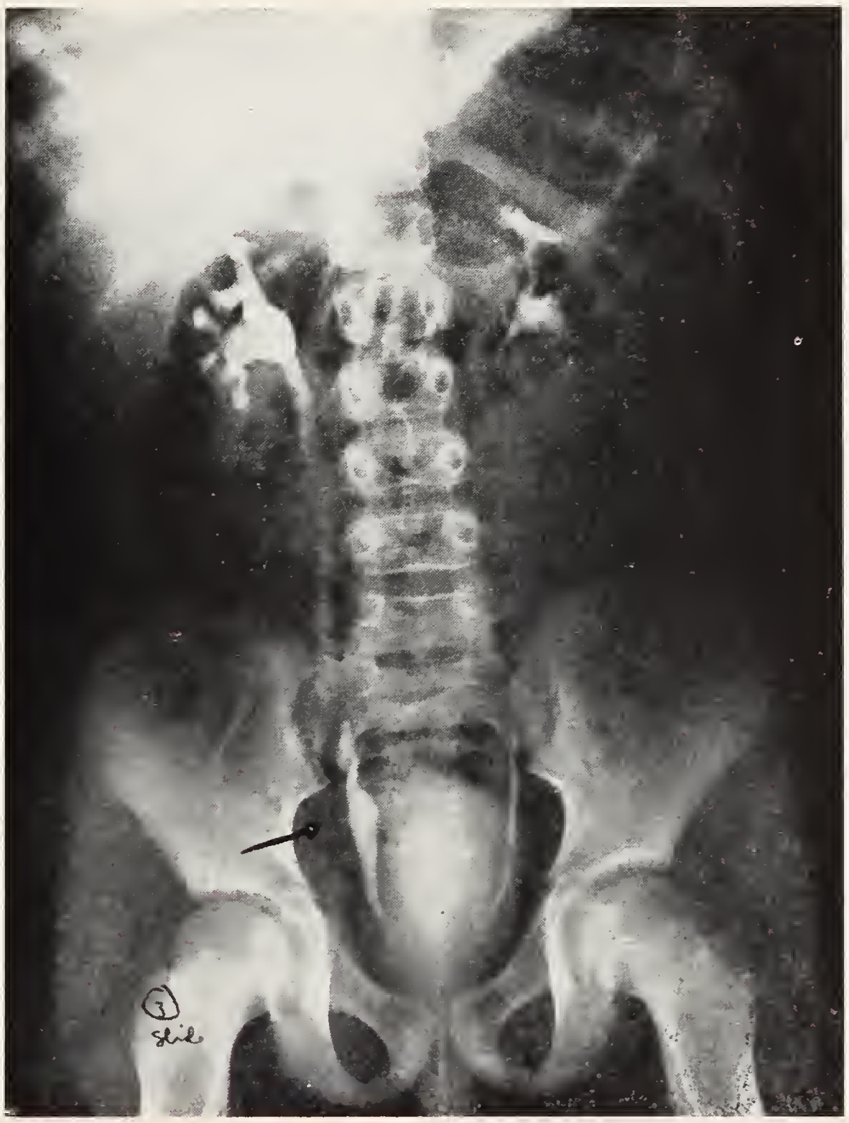

Fig. 4. This film demonstrates a non-obstructing type of calculus associated with painless hematuria. Removed by uretero-lithotomy.

Cystoscopy is to be postponed if there is relief of pain with the measures already outlined. Intravenous urography is now performed. The status of the uninvolved kidney is then determined. In addition to locating the calculus it also points up the presence of ureteral and pelvic dilatation above the calculus. Contrast material may not appear on this affected side. A nephrogram indicates obstruction.

One must not be lulled into a false sense of security when a patient who has suffered severe colic is suddenly relieved of pain. This may be due to the stone temporarily halted in its downward course. This relief of pain may be total in spite of the fact that the kidney is completely obstructed. However, it must be kept in mind that without evidence to the contrary, the stone is still in the urinary tract.[Fig. 2.]

Dodson reports that in a series of 2,862 patients with all types of calculus disease, 58.9% of the cases had ureteral calculi. He also reports that 12.9% of patients with ureteral calculi, in a series of 1,732 patients, passed stones spontaneously and in a series of 1,467 patients, 35.9% passed stones following cystoscopic examination with manipulation. Others have noted that a considerably higher percentage of calculi will pass spontaneously provided that a sufficient length of time is allowed and patience is exercised.

Once a stone enters the ureter, arrest may take place at any point, or it may rapidly pass into the bladder. A calculus, if it is channelled, may permit urine to bypass it for long periods of time — this may not be associated with hydronephrosis and the picture may be silent as far as pain is concerned.

Points of anatomical narrowing, where calculi are most frequently arrested are demonstrated in the work of Brodel. A stone may, however, be arrested in its progress down the ureter at any point. Its progress may be slow and it may be arrested and remain for varying periods anywhere in the ureter. The size of ureteral calculi varies greatly. A stone which is far greater in size than the caliber of a normal ureter may pass with surprising ease.

Having made a diagnosis of ureteral calculi, what does one do or not do — the latter is often the decision of choice. As long as the stone is moving down the ureter, however slowly, and even though this progression may take days or weeks, the wisest policy is to keep hands off. Of course there are times, and not too infrequently that it does become necessary to intervene, when there is severe pain associated with hydronephrosis and a complete block due to a stone that has not moved. These blocked kidneys are prone to infection. If bleeding develops and is troublesome, it may be necessary to perform cystoscopy with a view to bypassing the calculus, or extracting it. If extraction is successful a splinting catheter is left inlying up to the kidney to drain. This ureteral splint is secured to a Foley inlying urethral catheter, and drainage maintained separately. Kidney drainage is maintained for two or three days. This is necessary particularly where a jagged calculus has traumatized the ureter al mucosa. The edema incident to this trauma following extraction of the stone may be sufficient to continue the hydronephrosis. These patients will be in pain, febrile, and may show hematuria.

A large percentage of ureteral calculi will pass spontaneously. There remains a small percentage for which surgery will be necessary. A certain percentage will require instrumentation and these must be properly selected.

WHAT IS YOUR DIAGNOSIS?

Mr. J. R., age 66, 51 kgms., entered the hospital in critical condition with symptoms suggesting ruptured sigmoid diverticulitis. He was markedly dehydrated. His heart action was irregular. There was no murmur. He was extremely weak and listless. He was olyguric, though not anuric. The abdomen was slightly distended.

Because of his critical condition, an exploratory laparotomy was deferred.

Blood chemistry studies revealed chlorides to be 90 mEq., CO_2 10.9, sodium 123, BUN 195, bromsuphalein 60 per cent retention. The urine showed 1+ sugar. The blood sugar was found to be 296. Subsequent glucose tolerance test revealed a normal blood sugar curve.

Treatment was instituted and the patient eventually recovered.

What is your diagnosis? See page 128.

Dartal has apparently increased the chances for rehabilitation of seriously psychotic patients. This follow-up study emphasizes the benefits to be derived from a reasonable program of drug therapy coupled with good psychiatric and social management on an outpatient basis. The present trend toward development of local community psychiatric care on such a basis is encouraging. Local communities and local physicians have a serious responsibility in helping to make this new concept a broader public benefit.

A Follow-up Study of Discharged Patients on Thiopropazate Dihydrochloride (Dartal) Medication

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IN DECEMBER, 1958, I reported[1] on the use of Dartal in the treatment of hospitalized patients with chronic psychoses. Many of the 71 patients who had received the drug showed improvement sufficient to warrant their provisional release from the hospital. Twenty-five patients from this original hospital group, plus 18 others, are included in this follow-up report.

The purpose of this study was to follow the discharged patients into their communities in order to evaluate further their psychiatric conditions, to study social adjustments and to find the relationship between continued medication and progress of the patient. In addition, we were interested in exploring the roles of local medical supervision and over-all psychiatric guidance.

Methods and Procedures

The research team for this study consisted of myself and two psychiatric social workers, Gordon Peterson and Richard O'Neill. Both the psychiatric interviews and follow-up visits of the social workers were made at the patients' homes, thus achieving a better rapport than the traditional office setting allows. This also enabled us to evaluate living conditions, family relationships and conflicts.

The study began in August, 1959, and was concluded in February, 1960. It included 43 female patients ranging in age from 17 to 65, with an average age of 42 years. All were considered to have a chronic condition, having been ill for 1 to 20 years, with at least three periods of hospitalization. The time of interview was from 3 to 24 months following provisional discharge from the hospital.

Most of the patients were in low-income

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brackets, some receiving support from welfare agencies. Some patients were living with their families; others were in foster homes. Regardless of their psychiatric conditions, the patients were highly cooperative, as were most of their families.

The diagnoses and psychiatric conditions of the patients at the time of provisional discharge are shown in Table I. The patient with severe impairment had been discharged despite our strong objections. The 39 patients who required maintenance Dartal therapy were referred to their family physicians or County Welfare Boards because of our lack of outpatient facilities. Total daily maintenance dosages varied from 10 to 40 mg., with the majority advised to take 10 to 20 mg. of Dartal daily. Only three patients were to receive 40 mg. daily.

Table I. Evaluation of Patient at Time of Discharge

Diagnosis	Number of Patients	Psychiatric Condition at Discharge				Medication Requirement	
		A. Clinical Recovery	B. Minimal Psychiatric Impairment	C. Moderate Psychiatric Impairment	D. Severe Impairment	Maintenance Dose	Discontinued Before Discharge
Schizophrenia	34	5	20	8	1	32	2
Manic-Depressive, Manic Type	5	3	2	----	----	3	2
Manic-Depressive, Other	1	----	1	----	----	1	----
Psychoneurosis	2	1	1	----	----	2	----
Chronic Brain Syndrome with Psychiatric Impairment	1	----	1	----	----	1	----
Total	43	9	25	8	1	39	4

Table II. Classification of Patient at Time of Follow-Up Interview

Diagnosis	Number of Patients	Psychiatric Condition at the Time of Interview				Medication		Rehospitalized
		A. Clinical Recovery	B. Minimal Psychiatric Impairment	C. Moderate Psychiatric Impairment	D. Severe Impairment	Continued	Discontinued	
Schizophrenia	34	6	8	11	9	18	2* 14	3
Manic-Depressive, Manic Type	5	2	1	2	----	2	2* 1	1
Manic-Depressive, Other	1	----	----	1	----	----	1	----
Psychoneurosis	2	1	1	----	----	2	----	----
Chronic Brain Syndrome with Psychiatric Impairment	1	----	1	----	----	1	----	----
Total	43	9	11	14	9	23	20	4

* Patients discontinued on medication before discharge.

Findings

Table II shows the psychiatric conditions at the time of the follow-up interviews. Comparison of the two tables shows a definite shift from groups B and C of Table I to groups C and D of Table II. This deterioration in the psychiatric conditions of the patients was traced to lack of medication and unsatisfactory environment.

Medication. Of the 20 patients no longer taking Dartal, medication on four has been discounted upon discharge. Indifference and lack of insight by both patient and family were primary factors in the failure of the other 16 women to continue their medication. The fact that some of the family physicians were unfamiliar with Dartal also contributed to this problem, and the cost of the drug may have been prohibitive in a few cases. In no case, however, did a patient stop taking Dartal because of side effects.

Of the 16 patients who failed to continue their medication, 10 were reinstated on Dartal therapy. In each case, either the patient's family or physician had contacted the hospital, considering readmission for the patient. Instead, we suggested treatment on an out-patient basis. Nine of these patients were schizophrenic, with impairment ranging from minimal to severe. The tenth patient was a manic depressive, manic type, with moderate psychiatric impairment.

After being reinstated on Dartal therapy, the patients were contacted at 1 to 2-week intervals until improvement was noted. The previously considered readmission was not necessary for any of these patients, although the help of the County Welfare Board was required in one case; with the cooperation of this agency, the patient was persuaded to return to the Dartal regimen, and with placement of the patient in a foster home, more satisfactory environmental conditions apparently negated any need for rehospitalization.

One of the other six patients who had discontinued medication without our advice was considered completely recovered. She had been taking Dartal for about 3 years, maintaining a satisfactory adjustment since her discharge 1½ years prior to our interview. The remaining five patients refused to cooperate and could not be reinstated on Dartal. Three of these five had to be rehospitalized.

Environment. Of those patients continuing to take Dartal, only one was rehospitalized. This patient had been in the hospital for 14 years. Her home situation was extremely stressful and, in spite of Dartal therapy, she was in a severely disturbed state by the time she was readmitted. She now continues on Dartal therapy at the hospital, where her readjustment is satisfactory and her psychiatric impairment is minimal.

Many patients grew progressively worse because of stressful and unwholesome circumstances in their posthospitalization environments. Even when such unsatisfactory circumstances did not lead to discontinuation of medication, they were definitely detrimental to the patient's condition.

Social Adjustment

Patients with minimal psychiatric impairment sometimes make rather poor social adjustments, while the more severely ill patient will be making a fairly good adjustment. Noting this, we considered it important to compare the social adjustments of our patients with their psychiatric evaluations, and then to examine the various factors which affect social adjustment. We were particularly anxious to determine how continuance or discontinuance of medication fits in with other considerations in conditioning the patient toward positive or negative social adjustments.

Using the Mandel Social Adjustment Scale,[2] we considered occupation, family life, economic status, health and residence, and religious, recreational and social situations. Each patient was graded as follows:

Good adjustment—positive relationships in all areas.

Fair adjustment—moderate relationships in most areas.

Marginal adjustment—borderline adjustment in most areas, or a reasonable balance between moderate and negative features.

Severe maladjustment—negative relationships in most areas.

Table III shows a relationship between psychiatric impairment and rating. Patients with the milder degrees of impairment made better social adjustments on the whole, and the reverse trend also held true. The largest number making fair adjustments came from the minimal-impairment group, and almost all the patients in the marginal-adjustment category came from the moderately to severely impaired groups.

However, there were exceptions, such as the significant number of patients with moderate or severe impairment who made just as good or better adjustments than did less severely impaired patients. These paradoxical findings were clarified by examining the factors which affect social adjustment.

We considered the following to be basic

Table III.

Comparison of Social Adjustment with Psychiatric Evaluation

Psychiatric Evaluation	Number of Patients	Social Adjustment			
		Good	Fair	Marginal	Negative
Clinical Recovery	9	8	1	----	----
Minimal Impairment	11	----	10	1	----
Moderate Impairment	14	----	6	8	----
Severe Impairment	9	----	3	5	1
Totals	43	8	20	14	1

Table IV. Social Adjustment Groups and Factors Affecting Adjustment

Social-Adjustment Rating	Number of Patients	Maintained Medication and Supervision	Environmental Conditions			Utilized Social Resources
			Supportive	Indif-ferent	Nega-tive	
Good	8	4 (4)*	7	1	----	2
Fair	20	12	8	10	2	8
Marginal	14	7	2	9	3	6
Negative	1	----	----	1	----	----
Total	43	23	17	21	5	16

* Patients discontinued on medication before discharge

factors which influence social adjustment as well as psychiatric status: maintenance of medication under local medical supervision; environmental conditions; the acceptance of supportive services from social agencies. As one would expect, the data in Table IV indicate a correlation between positive factors and better social adjustments.

For instance, all of the patients who were rated as having made good social adjustments were taking Dartal under local medical supervision unless they had been instructed to discontinue medication prior to their hospital release. But, as the social adjustment ratings become lower, the percentage of patients in each group who continued to take Dartal becomes smaller.

The importance of environmental conditions also can be seen by examining Table IV. It is significant that only in the "Good" category did supportive conditions prevail, while in the "Marginal" category supportive environments were minimal, with indifferent and negative conditions prevailing.

Regardless of satisfactory living conditions, many patients required outside supportive services in order to stabilize their community adjustments. Many more patients than are shown in Table IV could have benefitted from such services.

Comment

Carefully selected mental patients can be returned to society, with successful adjustment in spite of many years of hospitalization, if proper follow-up services are rendered.

Cooperation of the patient's family and acceptance by the community are[5] of utmost importance. A chronically ill psychiatric patient requires an encouraging, supportive environment to prevent regression to a seclusive, psychotic state. The family should be sympathetic and willing to assume responsibility in seeing that recommendations are followed. If the home situation is stressful, it may be better to place the patient in a foster home. Where indifference in the home environment contributes a negative factor to social adjustments as a whole, the encouragement and support must come from other sources.

Psychotropic drugs provide such support pharmacologically, and their administration under local medical supervision is of twofold importance. Psychiatrically, the importance of medication for the chronically ill mental patients in a community cannot be stressed enough. Psychotropic drugs are of extreme value in helping these patients maintain a satisfactory adjustment. Secondly, the role of the family physician in the prevention and treatment of psychiatric disorders is becoming[3,4] more and more important, and the supportive therapeutic aspects which accompany his supervision of medication are highly valuable. Through his influence and that of the social worker further support can be provided from an outside point despite the environmental conditions in which the patient is living. Such support can lead to modification of the living conditions themselves, replacing negative features with positive ones.

In addition, we found that the psychiatric team frequently must lend the initial support which will encourage the patient to seek and maintain positive factors. How often, for instance, during just this study were we able to modify effectively the adjustment of a patient by reinstating her on Dartal therapy under her doctor's supervision? How often were we able to modify social adjustment by referral of the patient to a public-health nurse or by engendering the acceptance of social-agency services? Our observations emphasize the need for professional follow-up influences, not only on a continuous basis from local sources but also as an emergent type of support from the psychiatric team.

This need was shown by Barrett[5] in reporting on 2,018 patients released from institutions in the eastern State Hospital area. Of the 1,604 patients discharged without planning for coordinated follow-up services, 59 percent eventually were returned to the hospital; of the 414 furloughed patients followed under the supervision of out-patient clinics, only 29 percent returned to the hospital.

Rehospitalization frequently can be avoided by making visits from a psychiatric team available to the patient. Also, the psychiatrist's contact with the patient or relatives often has an impact different than that of the other members of the team. To the patient and his family, the psychiatrist's words carry a unique, authoritative weight which affords him the best opportunity to effect favorable changes.

Summary

This paper presents observations in following up 43 female patients, presenting a variety of mental disorders after their provisional discharge from Moose Lake State Hospital. The patients had been on thiopropazate dihydrochloride (Dartal) therapy for varying periods of time and, being chronically ill, 39 of them were continued on Dartal therapy at the time of their provisional discharge.

Approximately one third of the patients regressed after returning to their original social environments. Investigation showed that 16 of these patients had stopped taking medication. Also, the majority of patients were living under indifferent or stressful conditions in the home. However, all 10 patients who were reinstated on Dartal avoided rehospitalization.

Data concerning the relationship of environment to psychiatric and social adjustments of these patients show interrelationships between maintenance medication local medical supervision, social-agency services, and professional psychiatric guidance.

It is concluded that a multidisciplinary approach in dealing with psychiatric problems on an out-patient basis would limit admissions to mental hospitals only to the more seriously or dangerously ill, while a more tolerant attitude on the part of the community will help patients in establishing new and healthy relationships. The present trend toward development of local community psychiatric care is extremely encouraging. Such care will be of great benefit provided the local plans are coordinated with hospital programs already available to the community.

Dartal, brand of thiopropazate dihydrochloride, was supplied by the courtesy of G. D. Searle & Co.

(References continued on page 111)

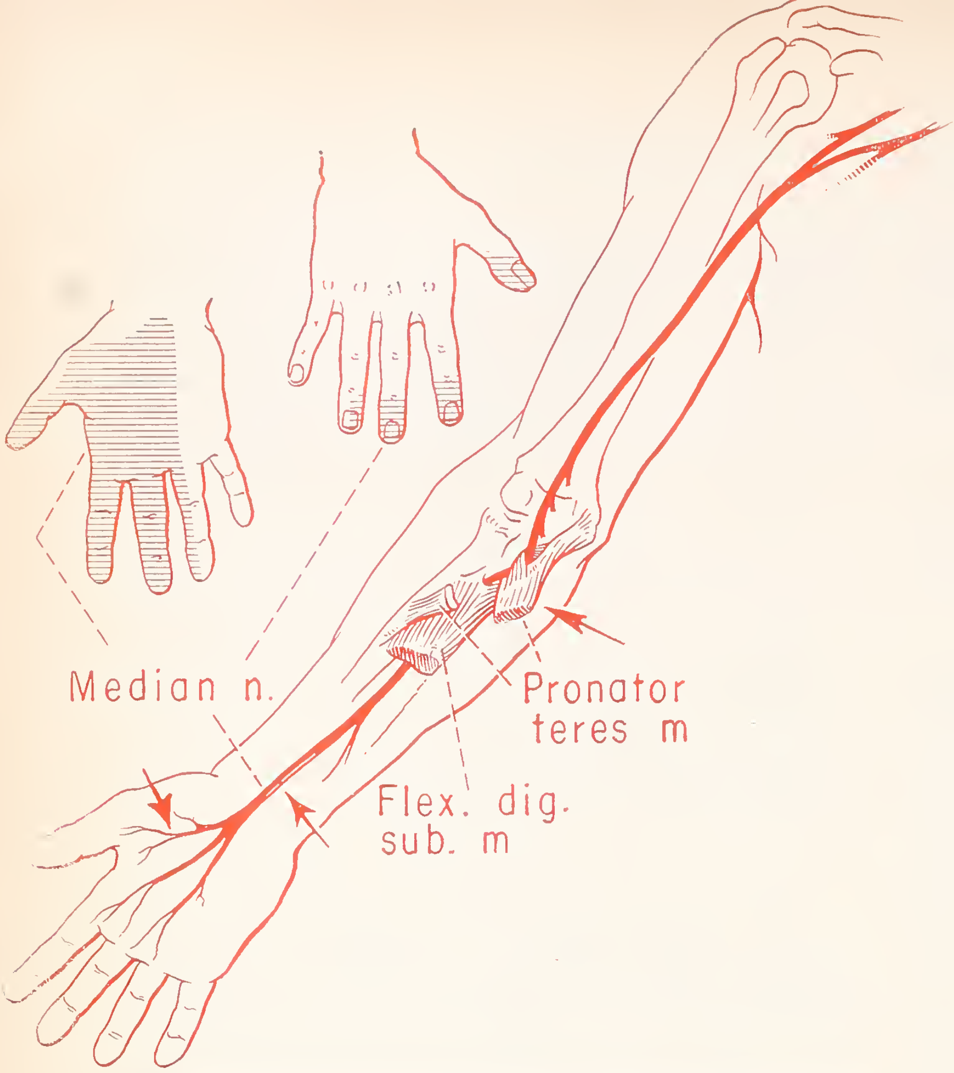
Median n.
Pronator teres m
Flex. dig. sub. m

Fig. 1. Common sites of injury to the median nerve are indicated by arrows. Note the zones of sensory loss in the hand.

DONALD W. MULDER, M. D.
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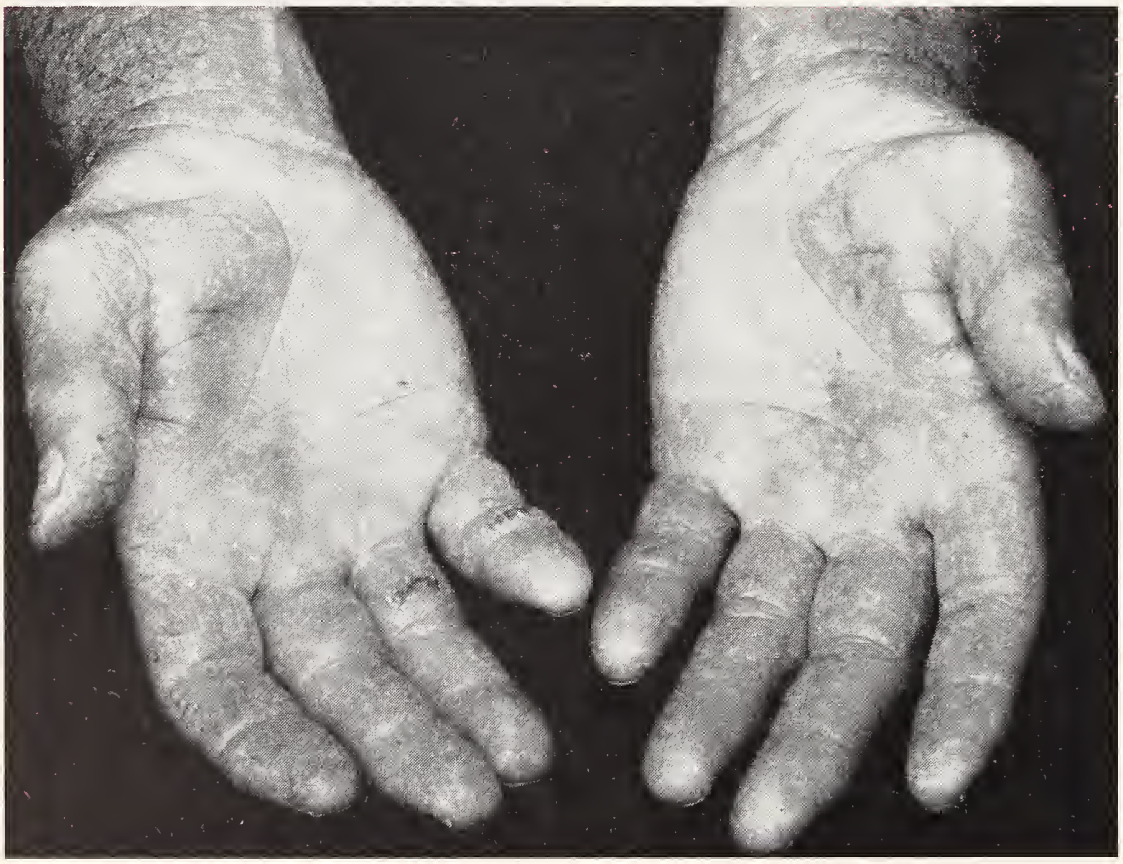
Fig. 2. Muscle atrophy in bilateral median thenar neuropathy.



Autogenous

Median Neuropathy

diagnosis and treatment

Discomfort and burning pain in the hand bring to mind the possibility of dysfunction of the median nerve. Flattening of the mound at the base of the thumb is almost pathognomonic of median neuropathy. Injection of hydrocortisone into the involved wrist or surgical decompression of the nerve may be needed for relief.

MEDIAN NEUROPATHY is a common cause of weakness and impairment of sensory perception in the hand.[1] Such a neuropathy may result from the ordinary activities of the patient or, less commonly, from external trauma. Those injuries of peripheral nerves that occur during ordinary activity have been called "autogenous" (self-induced) neuropathies.[2] The nerve damage in these instances is the cumulative result of repeated minor trauma, and the site of the lesion is determined by the vulnerable position of the particular nerve. When one considers the path of the peripheral nerves as they lie exposed over bony prominences and course through fascial tunnels and muscles, it is surprising that such mononeuropathies are not more common. The nerves may be crushed by unfortunate choices of position of an extremity, they may be compressed in sheaths shared with muscle tendons, and they even may be injured by the action of a muscle through which they pass.

Autogenous neuropathy involving the median nerve is common. Recognition is dependent on knowledge of the function and the symptoms of dysfunction of the median nerve.[3] In recent years, electromyography,[4] with needle-electrode studies of the involved muscles and determination of conduction velocity of the nerve, has been of great help in establishing the diagnosis when the true nature of the condition is in doubt. When a patient is encountered with a disturbance of strength or sensation in the hand, the possibility of dysfunction of the median nerve should be eliminated before the disability is attributed to compression of nerve roots or myopathy or one of the degenerative diseases of the nervous system.

The median nerve commonly is injured as it passes through the carpal tunnel at the wrist, producing the so-called median thenar neuritis.[1] It also may be injured as it passes through the pronator teres muscle in the forearm.[5] Rarely, the motor branch of the nerve may be injured by repeated pressure over the thenar eminence, as may occur with certain occupations. The nerve is injured at these vulnerable sites (fig. 1) by the casual activities of the patient. In many instances, the focal injury determines the site of the nerve damage but is not in itself sufficient cause for the nerve dysfunction. In these instances, the nerve lesion may be only one of the signs of a more diffuse illness that has made the peripheral nerves more senstive to injury.

Read at the meeting of the Southern Minnesota Medical Association, Mankato, Minnesota, September, 1960.

From the Section of Neurology, Mayo Clinic and Mayo Foundation.

Symptoms

The median nerve consists of sensory, motor and autonomic fibers. The symptoms of median neuropathy are related to irritation or impaired function of these fibers. The earliest symptoms are related to autonomic dysfunction. These are often poorly localized and are most prominent in the hand, although they rarely may be referred into the forearm or arm. Initially, the patient complains of a vague sensation of discomfort in the hand that is most prominent at night following a day in which the hands or forearms have been used for activities that may injure the nerve, such as milking or painting. As the symptoms progress, the patient complains of swelling, tightness, discoloration and redness of the hands. There may be a sensation of bruising that is not limited to any portion of the hand and and that may extend up into the forearm and occasionally even into the upper arm. This type of discomfort most commonly awakens the patient after several hours' sleep, and the patient frequently finds that shaking the hand vigorously or dropping it over the edge of the bed gives relief. These symptoms in the past have been referred to as "acroparesthesias." Later, significant vasomotor and trophic changes may appear; intractable burning pain (causalgia) may be present, the skin may be flushed and cyanotic and either moist or dry, the nails may be striated and changes in hair growth may occur.

Actual sensory loss is transient initially; when loss has taken place, it involves the thumb, the index and middle fingers, and half of the ring finger (fig. 1). This loss impairs the fine and discriminating activities of the fingers and thumb. Women complain about the inability to pick up pins or other fine objects. Men often complain that they cannot identify coins in their pockets. This impairment of sensation is a serious handicap to the patient whose occupation depends on dexterity of finger movement and the discriminating sensation of the finger tips.

Involvement of the motor fibers does not similarly handicap the patient. However, the resultant muscle atrophy is so characteristic as to be almost pathognomonic of median neuropathy (fig. 2). When involvement of the muscles becomes apparent, it is most pronounced in the lateral portion of the thenar eminence as a result of weakness and atrophy of the abductor pollicis brevis. Weakness of this particular muscle is not handicapping. It may be tested by gauging the strength of the movement and palpating the muscle as the patient places the thumb over the second finger and abducts it perpendicular to the plane of the palm against resistance. If severe nerve damage is present, there may be significant and handicapping weakness of opposition of the thumb. If the median nerve is injured above the highest muscular branch, one also may note weakness of pronation of the forearm, flexion of the wrist and flexion of the fingers.

Differential Diagnosis

The differential diagnosis involves any lesion that may cause weakness and paresthesia of the hand. It includes illnesses that cause widespread neurologic deficit, such as amyotrophic lateral sclerosis and polyneuritis, or local lesions involving the brachial plexus or cervical roots. The proper diagnosis usually can be made after a detailed neurologic examination if one keeps in mind the anatomy of the involved extremity. Percussing the nerve at the site of injury may give rise to tingling paresthesia evoked distally, the so-called Tinel sign. In median thenar neuropathy, forced flexion of the wrist may reproduce the patient's symptoms. The diagnosis may be confirmed best by electromyography, with stimulation of the involved nerve; this examination will demonstrate a complete or partial block of conduction of the involved nerve at the site of injury.

Predisposing Factors

A number of predisposing factors increase the possibility of a given patient having median neuropathy. Women in middle life are particularly susceptible. Certain families apparently have a hereditary predisposition. Activities and occupations in which the hands are used frequently and strongly often are associated with development of the syndrome. Illnesses manifested by edema or swelling about the carpal tunnel, such as rheumatoid arthritis and myxedema, frequently are accompanied by median thenar neuropathy.

In systemic illness in which the function of the peripheral nerves has been altered adversely, among the first symptoms may be those of median neuropathy. The location of the neuropathy apparently depends on the site of injury, but this injury in itself is not a sufficient reason for the symptoms. Thus, among patients with diabetes,[6] it is fairly common to observe median-nerve palsies prior to the development of classic diabetic neuropathy. In my experience, such mononeuropathies are common among patients who have diabetes, amyloidosis, leprosy[7] and other illnesses in which the peripheral nerves are diffusely damaged.

Periarteritis nodosa,[8] a relatively rare disease, characteristically gives rise to mononeuropathy in a high proportion of patients. Such lesions may be responsible for the initial symptoms of a generalized neuropathy or of neuritis. Finally, it appears that in some patients the increased sensitivity of peripheral nerves to pressure has a basis in heredity,[9] and throughout the life of the patient mononeuropathies frequently develop that may subside, only to recur later.

Treatment

In the treatment of autogenous median neuropathy, it is necessary first to prevent further trauma to the nerve. Early in the course of the illness, it may be possible to do this by having the patient change his way of using his hand and forearm so as to avoid trauma to the nerve. If the deep motor branch of the nerve is involved alone, such change is usually sufficient to prevent further damage to the nerve. It must be remembered, however, that little return of motor function can be expected once atrophy of the small muscles of the lateral thenar eminence has become complete.

When the nerve is injured in the carpal tunnel, particularly if associated tenosynovitis is present, injection of hydrocortisone into the involved wrist may be sufficient to relieve the symptoms. In some patients, surgical decompression of the nerve in the carpal tunnel or in the pronator teres muscle is required for relief of symptoms.[10]

Decompression of the nerve usually is followed by rapid subsidence of the uncomfortable autonomic or causalgic symptoms and a more gradual return of sensory and possible motor function.

Summary

Injury to the median nerve is a common cause of weakness and sensory changes in the hand. "Autogenous" median neuropathy includes those injuries occurring during ordinary activity.

The median nerve commonly is injured as it passes through the carpal tunnel at the wrist. It also may be injured in the pronator teres muscle in the forearm or by repeated pressure over the thenar eminence. Patients with such diseases as arthritis, myxedema, diabetes and amyloidosis are more susceptible to median neuropathy.

Injection of hydrocortisone into the involved wrist or surgical decompression of the affected nerve may be necessary for relief of symptoms.

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What the Generalist thinks of the Radiologist

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TO ADDRESS THIS august body of roentgenologists on this subject is no easy task. However, this is my assignment, and like all other country doctors across the land, I am accustomed to tough jobs, and accept this one with enthusiasm, although I may be outvoted in this assembly 100 to 1.

I should like to quote the words of another, greater, general practitioner who has described the medical horizon in these words:

> "Never has the outlook for the profession been brighter.
> Everywhere, the physician is better trained and better equipped than he was 25 years ago. Disease is understood more thoroughly, studied more carefully, and treated more skillfully. Diseases familiar to our fathers and grandfathers have disappeared and the death rate from others is falling to the vanishing point and public health measures have lessened the sorrows and brightened the lives of millions."

I wonder if you know whose words these are, and when they were said. It was Sir William Osler who said this in 1902. Far more true is every aspect of his statement today. And there are few who would dispute this additional statement today: That of all the branches into which medicine has been fractionated during the past half century, roentgenology has lead the way in diagnosis and therapy to the point where even the smartest soothsayer would hesitate to prophesy the ultimate degree to which Osler's statement will apply.

And so it is with much temerity that I approach this critical analysis of the radiologist. Certainly it can be conceded that every generalist would be expected to judge radiologists on the basis of his own experience with his own radiologist. This puts me at a great disadvantage, because my own radiologist is Dr. Sam Donaldson, recipient of the Gold Medal of the College of Radiology. Just how does one criticize a Gold Medal? That, I am not about to attempt. I just happen to live and work in a small community within the orbit of Sam Donaldson's Department of Radiology, with a staff of super radiodiagnosticians and radiotherapists unsurpassed in the country. This practically disqualifies me as a critic.

So I sought opinions on radiologists elsewhere. I asked other generalists for their opinions of radiologists. I wrote 50 letters — to 50 outstanding family physicians over the country, one in each state. I received 50 answers — a fair response. I received replies from 8 in the northeast states, 10 from the southeast, 10 from the middle west, 3 from the deep south, 12 from the west and northwest, and 5 from the southwest. Two demonstrated illegibility that defied geographical classification, which is about par for the course for generalists, probably no worse than for roentgenologists.

I asked these 50 generalists some pointed questions about their radiologists. Some were even a bit loaded. Now I want to give you their answers, some of which are very inter-

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Past President, American Academy of General Practice

Presented at Annual Conference of Teachers of Radiology, February 6, 1960, New Orleans, Louisiana.

esting. Some are pretty frank. Some men felt so strongly about their radiologists that they appended two pages of opinions.

This I can assure you: the generalist thinks enough of his radiologist to have definite opinions about him, and, not being dependent on anyone for referrals, he is willing to express them.

Question No. 1 — True Consultant

The first question was worded:

"Does your radiologist act as a true consultant to you?"

Of the fifty responses, only five are in the negative. So you pass this one with a 90% grade. Of these five, two say the radiologist is too busy, and one says he acts as a consultant only if approached specially.

However, 90% of these fifty men from all over the country consider the radiologist as a true consultant. Some were very firm, saying "absolutely," or "very definitely." One man in New Jersey consults with two radiologists; he says one is a real consultant and the other is not. One man in Mobile, Alabama, adds this comment: "My radiologist helps me decide which fractures I should treat and which need greater skill. He is helpful and honest in deciding which skin lesions need radiotherapy. He discusses the significance of findings based on his own experience."

One man in Seattle says, "I insist on seeing the films and reviewing them with him." I rather imagine all radiologists would welcome the real interest of this man. If they don't, they should.

One man in Los Angeles adds: "My radiologist is very accommodating and never in a hurry" This is a real compliment—to appear unhurried in spite of the handicap of living in Los Angeles.

It seems to me that the College should consider a 90% favorable response to this question a real accolade to the roentgenologist.

Question No. 2 — 'Talking Down'

Likewise is the response to the next question. I asked:

"Does your radiologist 'talk down' to you?"

Forty men, or 80% say "no." One man in Alabama says: "He goes out of his way to boost the morale of the generalist."

There are some complaints. One man in Virginia answers: "Not to my face, but reportedly behind my back." One man in Oregon and one in California single out younger radiologists as being dogmatic and condescending in attitude.

This question was asked because of the feeling of inferiority often expressed by generalists themselves. One man in Mississippi hits the heart of the question. He says: "I don't believe we can legislate respect. If we can't command it from proven ability, then changes need to be made." This is an astute observation, and one which the American Academy of General Practice has recognized from its inception. The principal emphasis of the Academy is on professional competence: to improve the educational and professional status of the generalist.

One answer comes in reverse, from a small community in New York State. When asked, "Does the radiologist talk down to you?", my correspondent answers: "No, we talk down to him." I suppose this accounts for so many X-ray specialists on the west coast.

Question No. 3 — Special Preference

The third question is the other side of the same picture.

I asked, "Does your radiologist show any special preference for specialists?"

I felt that if the radiologist does so, he is neglecting his professional relations, and a very important segment of medical care. I was happy to find that only 6, or 12% of the replies were in the affirmative, with not more than 2 in any one section of the country.

One man in New Jersey says: "Preference is in direct ratio to the amount of work referred." There is obviously something wrong with this picture.

On the contrary, one man adds this compliment: "My radiologist's interests are general, like mine, and cut across the other specialties. I suspect he is a more willing and valuable consultant to us than to the specialists who can't admit their need to as great an extent." One man in San Francisco puts the onus right back on the generalist. He says, "If at any time the radiologist shows a special preference for specialists it is only because the general practitioner is at fault, either in his questioning, or in some of his methods of practice."

Considering the three questions asked thus far, on the behavior of radiologists, involving their professional deportment, and the appraisal of their attitudes by generalists, we come up with 90%, 80%, and 88% approval, which certainly constitutes a vote of confidence from one branch of medicine to another.

Question No. 4 — Keeping Pace

Even more convincing are the replies to a question on the radiologist's professional educational status. To the question, "Does he keep pace with the current advances in radiodiagnosis and radiotherapy?", only one response of the fifty is in the negative. This is from a man in Iowa who has two radiological consultants. He very obviously likes one and dislikes the other, according the second all black marks. So, approval of the radiologist on the basis of his post-graduate studies seems to be almost 100% by this group of consumers of his services.

It seems to this observer that roentgenologists as a group should accept the responsibility of advising other physicians which procedures yield the best results, and which precautions to take in the patient's interest. For example, if it is true that one barium enema in children exposes the child to 30% of the maximum gonadal dose of radiation, I for one should appreciate this warning, even if I have requisitioned the procedure, before the radiologist proceeds. I expect of my radiologist that he should be fully informed on the use of I-131 in metabolic studies, in isotope-dilution techniques, in tumor-localization studies, and in the study of cardiovascular function. I think he should advise me on whether to request I-131 labeled oleic acid in G.I. studies, on Fe. 59 clearance studies in the leukemias and aplastic anemia, or whether treatment of polychythemia vera with *P*-32 may lead to chronic leukemia. And, I believe my radiologist should be equipped to utilize the best techniques in this rapidly expanding field of radiotherapy in the interests of my patients, with due consideration for the protection of the patient and the physician.

It must be gratifying to those of you who are engaged in the teaching of radiology to witness this overwhelming approval of your graduates by their confreres in general practice.

Question No. 5 — Shortcomings

Now, we are through throwing bouquets, and get down to real meat.

The next question was this:

"What are your radiologist's shortcomings?"

Time prevents a complete reporting on this score. I will, however, give you a digest. Here are a few samples:

#1. "He does not seem to be interested in the patient as an individual. He will discuss the patient's problem if forced to, but real interest is not evident."

#2. "The Department of Radiology is not available to the O.P.D. as we would like."

#3. "My radiologist is too much of an alarmist, too explosive."

#4. "He makes it appear to be a big favor to give any opinion beyond a short report."

These remarks all come from the northeast part of the country. From the middlewest comes only one:

"He is uncooperative."

One man from Texas criticizes his radiologist's pelvimetry readings, while one in Oklahoma answers thus: "No shortcomings except that he is at Rotary when I want him." In other words, you can't win.

From Boise comes this: "He does not take enough time to review cases."

From Oregon comes this criticism: "At times our radiologist fails to refer the patient back to me, and forgets to keep the generalist informed of progress in carcinoma therapy patients." This I believe is a legitimate complaint on communication. The radiotherapist should report to the physician in charge, just as any other consultant should.

From New Mexico comes the complaint that deep therapy is not available, but will be installed soon. You will note very little complaint about adequate facilities from any section of the entire country. I think this is significant and interesting, considering the cost of equipment.

It is also interesting that 20 respondents, or 40% specifically state that their radiologists had *no* shortcoming, some adding "absolutely none."

In general, then, such shortcomings as the general practitioner feels his radiologist has are in the area of personal relations rather than in that of professional ability. The family physician would like to feel that the radiologist has an interest in his patient and his problem, not simply in the films he is interpreting. Such an interest would have cancelled out every one of the so-called "shortcomings."

Question No. 6 — Aid to the Generalist

The next question was thrown into the hopper more to appraise the educational activities of the general practice group than the teaching proclivities of the radiologist. It was worded like this:

"Does your radiologist aid in your efforts to raise the status of the generalist?"

This probably requires a little explanation.

Some of you may remember back to the day when the leading surgeons and internists in the community of your childhood were all general practitioners with a particular interest in either surgery or medicine. This was before roentgenology itself was recognized as a specialty, not to mention the other eighteen board specialties of today, and the five sub-specialties, and the twenty-seven subdivisions of specialities.

It is a recognized and unquestioned fact that the development of roentgenology and anesthesiology has led the way in this march of the specialties toward medical perfectionism. It is also true that as the specialties marched, general practice withered on the vine. So great was the shock of realizing that her offspring had matured, and were now taking over the operation of the homestead, that Old Mother General Practice came close to cessation of respiration. This was twelve years ago, when the American Academy of General Practice was born — of necessity. A few family physicians met together and decided that in order to retain the hospital privileges for which they were fighting individually, they must organize and fight together; and that in order to merit those privileges, a continuing educational program must be instituted, and a constantly rising level of professional attainment must be required of the members of this new organization of family doctors.

Right here I should like to interject a note of appreciation to the College of Radiology for your contribution to the saving of the institution of general practice in the person of Mac F. Cahal, J.D., your most proficient executive secretary. After five years of working with your Board of Chancellors, Mr. Cahal became the Academy's executive director, legal counselor, and editor of the highly regarded magazine "GP." His contribution to general practice, and the Academy's debt to the College is universally recognized. I reiterate this only for emphasis.

As with all other progressive movements which happen to be born at exactly the right time, growth of the Academy of General Practice was rapid. Today, representing a phase of medical care which was dying in the late forties, the American Academy of General Practice demonstrates a membership of twenty-six thousand physicians in every part of the country. Every state has its own chapter. Organization goes on down through county level to hospital level, with staff departments of general practice in most departmentalized hospitals.

What is responsible for this tremendous growth, this revitalization of the general practice of medicine which was supposed to die out with the advent of super-specialization? What happened is a matter of record. The rebirth of general practice was in response to a need — a need for a family physician, repeatedly expressed by the laity throughout the country. The far-flung educational program of the Academy of General Practice was in response to another need — the need to keep pace with the specialties.

By far the largest, and most seriously studious audience of medical men in this country is the annual convocation of the American Academy of General Practice which meets in Philadelphia. If you are in that neighborhood, stop in and witness two thousand five hundred note-taking family physicians in a single audience voraciously ingesting practical therapeutics. This is the most avid, hardest working medical audience in the country, and this same enthusiasm for continuing medical education is projected on down to the hospital staff level where the staff department of general practice fosters monthly educational meetings for its family physician members.

The state chapters supervise educational credits for post-graduate study, and eliminate members who fail to qualify.

The Illinois Chapter of the A.A.G.P., for example, has 47 regional organizations, each centered in a hospital, each with its own educational program in cooperation with the five Illinois medical schools.

The state of California has over 2,500 members in the California Academy of General Practice. In every state in the Union, a continuing program of post-graduate medical education is in force.

You may well wonder just how the Academy of General Practice is able to induce overworked family physicians to maintain attendance at so many teaching sessions. It's quite easy. The Academy just simply drops from the membership rolls any physician who fails to meet the educational attendance standards; we have dropped over a thousand such members; however, the loss is more than compensated by hundreds of young physicians, new in practice, applying as soon as qualified.

Hospital staff level educational programs, the Academy feels, are the very essence of continuing post-graduate medical education. The level of medical care by the generalist is contingent in no small degree on day-by-day contact with his specialist confreres, including his roentgenologist.

These educational programs are the responsibility of the generalists themselves, but are dependent for success on the cooperation of the specialist members of the staff. Raising the status of the generalist is not the responsibility of the radiologist, any more than of the surgeon. Nevertheless, I put this question in just to determine whether radiologists generally share this teaching chore with the other specialties.

I think it quite significant that 24 correspondents of the 50 answer this question with a definite "Yes, the radiologist does aid in our efforts to raise the status of the generalist." No doctor from any area raises any objection to the radiologist, some adding, "This is our job, not that of the radiologist." However, some of the positive comments are worth noting:

From Georgia: "Our radiologist spends a great deal of time in film interpretation for family physicians."

From Virginia: "Radiologists are most cooperative when asked to participate in programs organized by the generalist."
From Florida: "Our radiologists have conducted 'film reading' classes for our local G.P. group. They are always willing to take time to discuss difficult problems."

(These film reading classes are interesting, in view of the reaction in some parts of the country to the attitudes of the College of Radiology on reading films taken in physicians' offices, about which I will be specific in a moment.)

From St. Louis comes this evidence of real rapport:

"Our radiologist attends the Academy scientific sessions and has been responsible for several new members for the Academy."

From many sections of the country comes testimony to indicate that radiologists in general do cooperate with and assist the family physician in his continuing educational endeavors. This is proper, and it is constructive.

Just incidentally, the Academy of General Practice staunchly supports the College in its efforts to roll back the tide which would render radiologists as pawns of the hospital system. Our own battle to maintain and elevate standards in our own field seems never ending. To an outsider looking in, yours seems to be in the same category. As we look to you for assistance, so we hope you will call upon us.

And before leaving the subject of "Aid to the Generalist," may I voice my personal appreciation of your tremendously educational film, "Radiation, Physician and Patient," which every generalist in my area has had the opportunity to see. With its pointed emphasis on gonadal protection, on the necessity for complete physical examination instead of complete radiological examination, on the danger of flouroscope, and antiquated equipment, on the techniques of patient and physician protection, and on the genetic consequences of high radiation dosage, this magnificent teaching film should be seen by every physician in America. It is certainly a major contribution to physician education.

Question No. 7 — Emphasis by Teachers of Radiology

Now I should like to shift from the hospital staff radiologist and his teaching responsibilities all the way up to the top and talk about you teachers in this room. Professors as a class dislike being told what or how to teach and quite properly so. This is particularly true in medical schools. I remember from student days, bursting in to the study of my pathology professor quite unexpectedly. He was sitting with feet on desk, cogitating his pipe and its rings of smoke. As I backed out the door, I apologized at once. "I'm sorry to have interrupted your thinking, sir." His reply: "No, come in. I was only rearranging my prejudices."

This time, I used the soft approach for the purpose. I asked my correspondents:

"What should teachers emphasize to residents on their relationship with generalists?"

I thought you might be interested in these opinions, and I submit them for information only.

Twenty-five answers are submitted. Note that many repeat ideas already expressed. I will give you 8 of them:

1. "Teach them to be Doctors of Medicine and to be interested in the whole patient. I have believed for a long time that if the radiologist would interest himself in the clinical picture and participate in the examination of the patient, fewer errors would result, particularly in G.I. studies."

2. "Teach them the limitations of X-Ray studies as a diagnostic procedure which is no substitute for a thorough history and physical examination." (This is precisely what you emphasize to the generalist in the film.)

3. "Teach them to treat the generalist as a member of the medical team. Remember that there are first class and second class generalists, just like first rate and second rate specialists." In the same vein, another says:

4. "Teach them that the generalist is just as much a partner as the specialist in solving diagnostic problems."

Another adds an appeal for more clinical help. He says:

5. "Teach them to be of clinical help in difficult cases, and not just make out the report and retire from responsibility."

Another answers from the patients point of view. He says:

6. "Teach them that we are both utilizing X-Ray facilities to serve better our patients, and that we welcome all the teaching we can get."

One man from Oregon, says:

7. "Teach them ethics and the problem of the generalist of treating the entire family, and not one small segment of one member in one age classification. Teachers should emphasize that dogmatism has no place in medicine."

8. It is interesting, too, to note that three men, from such widely separated points as Oklahoma, Baltimore, and Mississippi, all reply that no distinction should be made in the relationship of the radiologist with the generalist; that it should be the same as with all other physicians — governed by the ethics and courtesies and the obligations of any true consultant.

Reviewing these answers, one can recognize the emphasis on being human in relation to both referring physicians and to patients.

Question No. 8 — How to Improve Relationships

I thought it might be interesting, after hearing what advice our panel had for you teachers, to determine what they thought the staff radiologists themselves might do to improve their relationships with generalists. Twenty-two men have definite suggestions, many along the same line: "Be a true consultant, a good physician, and be human."

Some are more specific, and I give you the following:

1. "Be a generalist a few years before becoming a radiologist." One of the five who so suggested, states that five radiologists in his area had done exactly that, and that they have a far better concept of the problems of the patient and of the generalist, and are therefore better consultants. Such long training for roentgenology may be impossible of attainment, but such opinions might well be considered by teachers in selecting residents. Our Washington, D. C., correspondent approaches a controversial field. He says:

2. "Teach the Generalist who wishes to and can do radiology (diagnostic) how to do it properly, and what precautions he must follow for his own good and the good of the patient." This involves the question of film reading for generalists by radiologists, a highly controversial area.

One man in Iowa sends a copy of the policies adopted by the Board of Chancellors of the American College of Radiology on this point, together with the notice that after October 1, 1959, regular interpretations of films not taken by radiologists in his area will cease. This correspondent takes violent exception to this policy, stating that he will continue to have his technician take films, and will read them with or without the help of the radiologist. This is not an easy problem to solve. Let me quote from a California letter:

"In the last decade, in California, many private practitioners have installed x-ray equipment in their offices, most of these having been purchased by general practitioners. To counteract this trend the State Radiological Society passed a ruling that no member of the Society would read or comment on any films brought to him unless they were taken in his office or that of some other member of the Roentgen Society. When this was learned by the California Medical Association, they compelled the Radiological Society to withdraw this rule. This is an action which can be verified, if you wish substantiation. Personally, I have never had any member refuse to discuss with me, at any time, the films taken in my office."

This correspondent then quotes a generalist friend in Oceanside, California who, he says:

"I agree that the radiologist is glad to discuss any films with any doctor, on a doctor-to-doctor basis of consultation, but he will give no written report nor will he be directly quoted to the patient. On the other hand, it is recognized that a radiologists' responsibility is greater than that of a private practitioner when he not only takes and reads the film, but makes a complete written report which may become a legal document and fall into anyone's hands."

The doctor in Morgan Hill then continues:
"Another point of irritation between private practitioners and radiologists is the dual fee schedule with which you are no doubt completely familiar. We have compromised this disagreement in quite a few cases, here in California, by making two fees for x-rays. That is, one for taking and processing the film and an additional fee to anyone who reads and writes a written report on the films. This again, seems notably fair to everyone."

And, then he adds:
"I feel that many complaints charged to radiologists in general, can be traced down to one radiologist in particular, who is unusually abrupt, autocratic or possessive about the cases referred to him. I do not feel, however, that the whole group can be tarred with the same brush for the actions of a few individuals. Indeed, what group is free from having a few of these obnoxious personalities."

Our Rhode Island correspondent says:
"Radiologists should accept the fact that many generalists can learn to take and read X-ray films, and they should be willing to help in the more difficult problems. My radiologist reads my films of 25% of the fee." It is obvious that local customs vary.

Our Virginia correspondent adds this:
"It should be stressed that no group of physicians needs the radiologist as much as does the generalist for review of films taken in the office, which practice must continue if the patient is to have the best and most efficient service."

From another part of California, the San Diego area, come these comments:
"In this country we have only recently completely eradicated the traveling film reader. This era was one of such low ethics and morale that patients were seriously harmed. In that era there was a tendency for the radiologist to produce an invitation to surgery with diagnoses which were not radiologically justified. This, for instance, was frequent to see on a report of a cholecystogram: 'The emptying of the gall bladder is delayed. Diagnosis: chronic cholecystitis.' These would be given on cholecystograms which were no stones.

"The shortcomings of most radiologists seem to be primarily, in our office, an extreme perfectionism which makes them reject many films for slight technical defects. Perhaps this is really not a shortcoming and we appreciate that the radiologist tries to maintain his integrity by refusing to read films which are not technically excellent. I believe that our radiologist really raises the status of all of us in general practice.

"In this country we set up a principle of procedure in which the radiologist will give free consultation to general practitioners on films that are brought to them by the doctor, that is, the general practitioner. These are unwritten and are in the interest of medical knowledge and education. If a written report, such as those required by insurance companies, hospital records, and the like is required, the radiologist should have control of the making of the film and should charge a normal fee."

Now, I do not offer these suggestions to the Board of Chancellors as an overall solution to all problems in the relationship of radiologists and generalists. I do believe these problems differ according to geography and custom. These problems do exist and will probably continue to exist. Their solution should be not on consideration of intra-professional economics, but rather on the firm ground of what is best for the interest of the patient. In fact, this is the basis on which all socio-medico-economic problems should be met.

It is even possible that the radiologist in Oceanside, California, cannot resolve his problems incident to generalist-radiologist relations on the basis of an edict emanating from Chicago. But I hold that it *is* possible for intelligent physicians who have common problems, in any community or any hospital, in the country, to sit down around a table, and put the problems face-up, and learn to understand the problems facing both sides, and finally to come up with a reasonable and equitable solution.

Question No. 9 — The Generalist's Part

Toward the end of this questionnaire, I did slip in a question involving the generalist's responsibility. I asked:

"Do you aid your radiologist by supplying pertinent facts from history?"

As expected almost 100% replied in the affirmative. I was a little surprised when one man in Arkansas said, "No, except in very special problems when I can locate him for a discussion. He has not definitely requested histories. He has no form on which to give history." This was just a little surprising, but only one case out of 50.

Question No. 10 — What Improvements Indicated

A few very specific suggestions came in answer to the last question which was:

"What radiological services need improvement?"

Fourteen such suggestions were submitted, the majority asking for quicker service, more prompt reports, and telephoned reports in cases so requiring.

A few others are:

1. Improvement in quality of gastro-intestinal studies. (Pennsylvania.)
2. Facilities for isotope studies and a tumor clinic. (Maine).
3. Better week-end and holiday X-Ray coverage. (Iowa).
4. Better pelvimetry studies and interpretations. (Delaware).
5. Elimination of delay in doing fasting studies, for better care. (Virginia).
6. Personal consultation with the referring physician when history may influence final Roentgen diagnosis. (Oregon).
7. Better deep therapy equipment. (California).
8. Reduction in cost. (California).

Summary

To summarize this small survey of the attitudes of half a hundred generalists toward their radiologists I have arrived at four conclusions:

1. They feel that the great majority of their radiologists merit great respect from the referring physician, that they show no special preference for specialists, and that they act in the capacity of true consultants.

2. They feel that radiologists do have some shortcomings which a larger measure of human interest would rectify.

3. They believe that teachers of radiology, by emphasis on the human and personal interest aspects of medical care, could to a large degree, alter the attitude of practicing radiologists in a constructive manner.

4. They believe that generalists do have some problems with radiologists involving professional ethics, quality care and economics, which could and should be solved by the conference method on the local level.

I conclude that this is a highly complimentary appraisal of your specialty by mine. I should be most interested in the reverse appraisal, of generalists by radiologists.

Abstracts and Briefs

INFLUENCE OF TEMPERATURE OF VENOUS BLOOD IN THE EXTREMITIES

A popular misconception exists that the temperature of blood, like that of the mouth, is maintained within a narrow "normal" range—37° C. (98.6° F.) Such is not the case. In the superficial vessels of the skin and in the peripheral circulation the temperature of blood often falls to levels near those of the cool structures through which it courses. Likewise, the blood may also be warmed by passing through a "hot" organ, such as an exercising muscle which releases a great deal of heat.

It was noted by the authors that in normal persons engaged in indoor activity the usual temperature of blood in the superficial veins of the lower leg is about 30° C. (86° F.); in the antecubital veins about 34.5° C. (94° F.); and deep within the gastrocnemius muscle approximately 36° C. (97° F.). In afebrile bedridden patients the temperatures are essentially the same, except that the level is about 2.5° C. (4.4° F.) cooler in the gastrocnemius muscle of the confined subjects.

Enzyme activity would be expected to be altered, since the reaction rate of most enzymes falls about 200 per cent with a 10° C. drop in temperature (van't Hoff's rule). Effect of low temperature on clotting was also studied. At the temperature of superficial venous blood in the lower leg the viscosity of the blood is increased about one-third, leading to stasis. However, the rate of clotting is significantly retarded. The usual Lee-White clotting time at 37° (98.6° F.) is 4.5 minutes; at 30° C. (86° F.) it is about seven minutes. Prothrombin time increases from 14.5 seconds to about 20 seconds on reducing the blood temperature from 37° C. (98.6° F.) to 30° C. (86° F.)

Blood clotting at a cooler temperature exhibits clots which are less cohesive and more fragile when exposed to compressive and tractive stresses. Moreover, acute clots formed at lower temperatures are less adhesive to vein walls.

These studies indicate that at the cool temperature of the superficial venous blood in the lower extremity, blood viscosity is significantly increased favoring stasis, the clotting mechanism is retarded and the resulting clots are fragile and adhere weakly to vein walls. Such findings may have pertinence with regard to the tendency for thrombi formed in cool vascular beds (such as those of the lower legs) to give rise to emboli.

Harold D. Kletschka, M.D.
Syracuse, New York

Rubenstein, E., and Lack, A.: The Clotting Mechanism: Studies on the Influence of the Temperature of Venous Blood in the Extremities. California Medicine, 93:227-228, Oct. 1960.

IMMUNE MILK — VALUABLE?

Colostrum collected from cows after injections of ragweed pollen into the udders showed no evidence of precipitating or blocking antibodies for ragweed pollen antigens. A series of twenty-six ragweed hay fever patients treated with the equivalent of a quart of such colostrum daily showed no greater benefits than twenty controls taking an equal amount of commercial skimmed milk.

This paper opposes recent controversial reports from the School of Veterinary of the University of Minnesota concerning therapeutic effectiveness of immune milk in a variety of conditions, including common allergies.

J. D. Krafchuk, M.D.
Minneapolis, Minnesota

Sherman, W. B., and Freedman, S.: Immune Milk in the Treatment of Hay Fever. Journal of Allergy, 31(5): 476-479, Sept., 1960.

NEW SURGERY IN PANCREATITIS

An operation which includes vagotomy, diversion of food and gastric acid from the duodenum and retrograde drainage of the pancreas has been devised wherein the tail and body of the pancreas were resected with retrograde drainage into the head of the excluded gastric antrum.

The authors, however, state that they believe the initial surgical procedure for patients with recurrent pancreatitis should consist of a transduodenal sphincterotomy with exploration of the main pancreatic duct and correction of existing biliary disease. They treated 53 patients by this method with fairly satisfactory results. The failures in this procedure have been subjected to the operation now described by them. Their success in a two-year period on five patients has encouraged them to describe the procedure.

In essence the tail and body of the pancreas, after being mobilized to the right of the superior mesenteric vessels, are drawn through an opening in the posterior wall of the antrum. Then a hemigastrectomy and a vagotomy are done. Any excess gastric antrum is resected and then closed over the cut end of the pancreas. Gastro intestinal continuity is restored by antecolic gastrojejunostomy.

This procedure exemplifies another of the very numerous, ingenious approaches toward solution of the problem of *the difficult recurring pancreatitis. One might have considerable concern in regard to the ulcerogenic factor induced by a hemigastrectomy leaving a large portion of antromucosa in place in spite of the addition of a vagotomy. The advantage of this procedure over the retrograde drainage method of duVal, Puestow, and others of diversion of the food stream stimulus to duodenal mucosa may not warrant the ulcer risk, particularly when adequate retrograde drainage of the pancreatic ductal system has been established.*

J. H. Strickler, M.D.
Minneapolis, Minnesota

Bartlett, Marshall K., and Nardi, George L.: Treatment of Recurrent Pancreatitis by Resection Inhibition and Retrograde Drainage of the Pancreas. Annuals of Surgery, 152:861-863, Nov., 1960.

PREVENTION OF STROKES POSSIBLE

In an attempt to prevent cerebral infarction, anticoagulant therapy was given for extended periods (up to five years) in 115 patients with episodes of focal cerebrovascular insufficiency. Siekert, Millikan and Whisnant report that four percent of this treated group experienced a cerebral infarction. Forty percent of a similar but untreated group of forty patients sustained a cerebral infarction. The occurrence in intracerebral hemorrhage was the same in both groups.

R. G. Siekert, M.D.
Rochester, Minnesota

Siekert, R. G., Millikan, C. H., and Whisnant, J. P.: Anticoagulant Therapy in Intermittent Cerebrovascular Insufficiency, Follow-up Data. Presented at the Minnesota Society of Neurology and Psychiatry, Sept. 13, 1960, St. Paul, Minn.

SCIENCE EXPLAINS GOOFS

In a light vein, consideration is given to the influence of certain general laws of nature on Dermatologic research, which are also applicable to other fields of medicine, and probably to many other fields of human endeavor.

Gumperson's Law, formulated by chemists, states, "The contradictory of a welcome probability will assert itself whenever such an eventuality is likely to be most frustrating."

Corollary number one more simply states, "If anything can go wrong, it probably will."

Corollary number two indicates, "Nature always sides with the hidden flaw."

Corollary number one appears similar to the United States' Air Forces' Murphy's Law, incriminated in recent experimental mishaps: "In any situation where anything can go wrong, it will."

This paper describes a phenomenon familiar to all, but hitherto unnamed.

J. D. Krafchuk, M.D.
Minneapolis, Minnesota

Goldman, L.: Application of Gumperson's Law and Its Corollaries to Dermatology. AMA Archives of Dermatology, 82(3):419-420, Sept. 1960.

EFFECT OF HYPOTHERMIA IN BOWEL ABSORPTION

The transport of substances from the lumen of the small bowel to the blood stream is altered under varying environmental conditions. Interference with vascularity of an isolated loop of bowel slows absorption of strychnine; anoxemia increases absorption of water; drug-induced decrease of motility of the bowel impedes absorption of radiosodium and heavy water; vagotomy which reduces intestinal motility decreases glucose absorption from isolated jejunal loops, while sympathectomy has the opposite effect.

The reduced intestinal motility attending hypothermia suggested that the effect of hypothermia upon venous return and absorption from isolated canine loops should be assessed. The effect of hypothermia was determined on 1) venous outflow from closed jejunal and ileal loops, 2) strychnine absorption, and 3) removal of radio-active iodine (I^{131}) and radio-active iodinated serum albumin from isolated intestinal loops.

Results indicated that hypothermia reduced the net transport of substances from gut lumen to blood stream. In strychnine absorption, systematic hypothermia (25-30° C.), at clinically feasible levels is not as effective in delaying transport as local hypothermia (10° C.). Hypothermia reduced absorption of radio-active iodinated serum albumin approximately ninefold and that of I^{131} about fivefold. Venous return measurements indicated a mean reduction in similar lengths of hypothermic jejunal and ileal segments of 72 per cent and 66 per cent respectively.

Harold D. Kletschka, M.D.
Syracuse, New York

Griffen, W. O. Jr., Castaneda, A., Nicoloff, D. M., Stone, N. H., and Wangensteen, O. H.: Influence of Local Hypothermia on Absorption from Isolated Intestinal Segments. Proceedings of the Society for Experimental Biology and Medicine, 103: 757-759, April, 1960.

WELFARE DRUG COST REDUCTION

A program to provide a ten per cent allowance to those states which reimburse retail pharmacies directly for prescriptions filled by them for the state's welfare patients has been announced by E. R. Squibb & Sons.

The Squibb proposal, to be made directly to state welfare directors by the firm's medical representatives, will reduce medical welfare costs to the states equal to ten per cent of the amount they pay to private pharmacies for filling welfare prescriptions.

All Squibb prescription products come under the new program.

Elements of the Squibb plan, such as the systematic determination of the amounts spent for Squibb-specified prescriptions for welfare patients, reimbursement procedures, supporting schedules and similar administrative details will be worked out with those states electing to participate in the plan by the company's representatives.

President's Letter

NEW FRONTIERS UNLIMITED

We have now crossed the threshold into the 1961 era of new frontiers. Once again attention has been directed to the natural processes of aging of our citizens and of this important segment of our population.

A number of objectives—some old, some new—have been advocated by those who recognize new frontiers in the care of the aging. The objectives which have commanded the most attention of late are those concerned with medical, economic and political phases of the aging problem.

It is paradoxical to note that the medical profession has added to this problem of the aged by the revolutionary advances made in medical care, which during the past sixty years has increased life expectancy of the average American citizen by twenty plus years. When one analyzes the economic phase of this problem, one soon appreciates its complexity.

Many forget that in the care of any segment of our population, a cooperative approach must be made by all; namely, doctors, nurses, hospitals, social organizations, insurance companies, industry, labor, local community units, and finally, but most important of all, the family unit.

The family unit has almost been forgotten as a potent force in helping solve this problem. It has been obscured by the hue and cry of political Pied Pipers. In no other areas are we doctors more effective than when we are called upon to counsel the family in the care of their aged. The third party approach will surely tarnish the private physician-patient relationships, if in fact, it does not wholly destroy it. The political approach to this specific aged group was initiated primarily by the Forand Bill, as you are well aware. In viewing past political activities, it is interesting to note that the Social Security approach to this problem has followed a well established congressional precedent of amending the Social Security Act every two years, or more specifically, every election year.

We, in Minnesota, can be proud of our record in the care of our senior citizens through our Old Age Assistance program, and now with the incorporation of the Kerr-Mills Bill, or using the principles of its provisions in the liberalization of our present O.A.A. program, this record will be further enhanced. We feel that if other states had taken, or will soon take the same responsible position in this care, the threat of Forand-type legislation would not be as potent a force today that it is.

The past weeks have seen signs of improved relationship between Minnesota Blue Shield and the State Medical Association. Basically, there have been differences in opinion in the method of selection of, the size of, and the representation in the corporate body of the Blue Shield. A compromise solution was adopted by the House of Delgates at its recent special session, involving a formula for the increase in the corporate body. Two provisions were added to this formula:

first, a review of the present membership in that body; and second, a limitation of tenure of five years to be placed on its members with privilege of re-election. Blue Shield was further granted the privilege of enlarging on its services by authorizing them to add a rider to the present Blue Shield contract covering hospitalization if the subscriber desired that coverage. However, the lack of unanimity to this approach in coverage was clearly demonstrated by the delegates, when they insisted that every effort should be made to resume relations with Blue Cross, so that complete coverage of both medical and hospital services would be available to this public by these two plans which have been long identified and synonymous with complete health care.

To further meet the demands of the public and the related economic changes brought on by inflation, Blue Shield was granted approval for increases in income limitations in the present two plans. Also approved was the Blue Shield request to add an additional new contract to cover higher income groups.

With the approval granted to these requests, together with the approval of the mechanism for selection of the corporate members, we look for the return of Blue Shield to its proper place in the State Association. We also look forward to the restoration of control to the participating physicians where it rightfully belongs. We hope the Board of Directors of Blue Shield sees fit to unanimously adopt and endorse the actions of the House of Delegates.

With a unified effort to implement the Kerr-Mills Bill, fortified by a revitalized Blue Shield, we have powerful weapons to challenge the assertions and demands of those whose only solution to meet the medical needs of all is by socialization. I emphasize "the medical needs of all" for just recently former Congressman Aime Forand finally admitted his ultimate purpose for the compulsory social security approach to health care when he stated at a meeting following the White House Conference on Aging: "**If we can break through and get our foot inside the door, then we can expand the program after that.**"

Let us then, as an Association and as individual physicians, make our position clear. Let us pledge to continue to give our patients the best medical care available and finally, let us remember that this availability of the best medical care will continue only as long as our present system of free enterprise is preserved.

C. L. Oppegaard

President, Minnesota State Medical Association

Editorials

EMOTIONAL FACTORS IN CORONARY OCCLUSION

Is it any wonder that the heart should receive more attention than any of our body organs by medical personnel as well as the laity? Listen to the words and expressions you hear every day, — hear your own words. From Chaucer to Capote; from Aesculapius to modern cardiologists; yes, from time immemorial the heart has symbolized the care of the soul and the center of man's deepest emotions. The heart, — feared and respected as an organ of sudden death. Traditionally the seat of all our emotions, the heart is used in daily speech to describe our emotional experiences. Lovers speak of being light-hearted; broken-hearted; heart and soul in love. The suffering and injured describe themselves as heart-sick, weary-hearted, their heart aches with pain. Cold-hearted, hard-hearted reflect hostile feelings. The coward? Chicken-hearted. Who has not had a heart to heart talk, that frank and intimate communication between two people? Who has not had the heart to carry through an action? Who has not taken heart? Whose heart has not been in his mouth; whose heart has not stood still? The heart. It beats through our language to express our feelings. One organ of the body to express such basic emotions!

What, if any relationship could this have on the function of the heart in health and illness; in the production of injury to the heart; or indeed, to the way one might recover from, say, a myocardial infarction?

The incidence of coronary disease is on the increase. It attacks all groups of people, particularly those in positions of responsibility, — ambitious, competitive people; professionals, executives in business and government, persons in positions of authority and leadership. Heart disease destroys with tragic rapidity our heroes and idols. Is this our reward for ambition, success — progress? Small wonder medical research centers on the human heart!

Perhaps it would be well here, to reflect on the spectrum of time; examining the past treatment of heart disease, evaluating the turbulent present with its overwhelming accumulation of data, and then to the always pleasant speculation of what the future will bring in our consideration of the relationship between the emotions and the treatment of heart disease.

It seems unusual that such a dramatic disease as coronary occlusion should receive so little mention in the medical literature until the later part of the 18th century. Corvisart (1813) who was a physician during the French Revolution was impressed with the increase in the incidence of heart disease in those times, which he considered to be the effect of the emotional stress of the Revolution. He states: "Let me speak of the influence of moral causes, and especially let me name the passions. I shall venture to say that, by a deplorable fatality, the noblest passions, the sublimest feelings, react also on the heart, and often derange its action." Corvisart went on to add, "If anyone can seriously deny, or even doubt the fatal physical influence of the passions upon the heart, it surely will be sufficient for him to know that it sometimes bursts in a fit of passion, and causes instant death. The calamitous events, the bloody scenes of the Revolution, the loss of property, the arrests, the emotions and grief occasioned by them, have furnished in our time ample proof of the influence of the passions in exciting organic diseases in general, and those of the heart in particular."

John Hunter (1793) stated that his life was in the hands of any rascal who angered him. As though he spoke prophetically, this death came suddenly as a result of a fit of temper.

For over a century and a half only occasional reports appeared in the medical literature pointing out the apparent connection between the emotions and coronary disease. E. H. Desportes (1811) said, "Symptoms are most certainly brought on by emotional disturbance, joy, sadness and above all by bursts of anger, even though the body is at rest." J. Wardrop (1851) (Consultant cardiologist to William IV) commented, "The effects of the passions on the heart are still more remarkable when the heart is previously in a diseased condition; and so great is this influence that there are numerous instances of persons afflicted with a diseased heart who have perished suddenly from some violent emotion. This powerful influence of the mind ought surely be a useful lesson to medical men in the moral treatment of those with a disorder of the heart."

Early in the twentieth century, Sir William Osler described a coronary type of personality, his work being augmented by Dr. Dunbar and her associates less than half a century later. Dr. Osler commented on the high incidence of coronary disease among doctors, suggesting that worry over their patients was the physician's pathogen.

The power of the emotions on the body remained in a state of infancy until the investigations of Sigmund Freud who, through his discovery of the unconscious, led us to the uncharted worlds of man's mental and emotional life. Using Freud's theories of the activity of the unconscious mind as a key, we are, through careful research and observation, able to open new doors and further examine the undeniable truth of the relationship between the heart and soul.

Changes that can be measured and recorded prove that emotional stress can affect the cardio-vascular system. Pulse rate, stroke volume, cardiac output, blood pressure and blood clotting time all may be influenced by emotional factors. This being a scientific truth, is it not plausible that the passions and attitudes might also play a major role in the precipitation of a coronary occlusion? If stress affects the cardio-vascular system in health, is there any reason to assume it will not have a deleterious affect on the diseased heart? It is our responsibility as physicians, to take the cold data out of the laboratory and integrate it into our modern treatment of heart disease so that our patients will profit and our medical research will not be half-hearted.

(To be continued)

Barney M. Dlin, M.D.
Philadelphia, Penna.

Ref: Kowal, S. J. — Emotions and Angina Pectoris. An Historical Review. American Journal Cardiol. 5:421, 1960.

INFORMING PATIENTS REGARDING HYPOCHONDRIACAL COMPLAINTS

Patients frequently disagree with their physicians regarding the cause of their complaints. In the Outpatient Clinic of the United States Army Hospital, Aberdeen, Maryland, it was found by use of a questionnaire technique that only about one out of three patients agree with the doctor regarding the etiology of their hypochondriacal complaints. Of eighty-five patients whose symptoms the physician felt were primarily or partially emotionally based, only twenty-three agreed with the physician. The remainder felt that their backaches, headaches and various other complaints were due to organic disease.

These complaints are often helping the patients to maintain their self-respect. For example, a boy afraid and ashamed of failing in school needs an excuse for his failure and begins to believe he is sick. A husband who is afraid and ashamed of losing his job gets sick to excuse his job loss.

It may be wisest at times to let patients use their face-saving mechanisms and to make no attempt to explain the emotional component to their complaint. But sometimes it is important to try to interpret to them what is happening. Not to do so may tacitly encourage them to go on to ingrain a pattern of hypochondriasis.

When the physician does try to explain, his problem is to enlighten without further lowering the patient's already lowered self-esteem. This is not always easy to do. When we begin to explain how worry and tension can cause physical pain, the patient may quickly take the doctor to be inferring that he is "faking" his symptoms or is "psycho" or "goofy." If the doctor can't obviate or at least dilute the effect of this inference the patient will feel more dejected and as a result be driven to cling more tenaciously than ever to his idea of being physically ill. In such an instance the explanation has been a hindrance rather than a help. Also, the patient at this point may leave the doctor just when he needs the doctors help the most, since the doctor through positive, hopeful counsel can often help restore the patient's self-respect if the patient does not get discouraged and fail to return for further visits.

No doubt a vital factor in determining how successful the physician will be in getting the patient to accept the physician's point of view is the physician's own orientation toward emotional problems. If he sees this disease as he sees other diseases — determined by various causes and mechanisms in the patient's life — then he will in all likelihood be motivated to be gentle and helpful. However, in practice, this deterministic orientation toward emotional disease is far from universal. We wonder if the patient could not lose his non-organic physical complaints "if he wanted to," and we wonder sometimes if the patient is not "faking" or "just lazy." If we perceive it in this light, then we do not feel motivated to encourage or assist the patient in the resolution of his problem.

In summary, it was found that patients disagree with their physicians about the causation of their complaints. These patients must sometimes be told that their complaints are not physical but we must try to convey to them the attitude that they are not therefore less worthy or salvageable. The central element in determining whether a physician will be able to do this is his own orientation toward emotional disease.

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University Hospitals
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TESTS SUGGESTED AS ROUTINE PRACTICE

Chronic simple glaucoma is an insidious disease that can sneak up on its victim and cause irreparable damage to vision before it is even noticed.

Drs. Robert R. Huntley and Kerr L. White, of the North Carolina University School of Medicine, in their article "The Use of Screening Techniques in Family Practice," say that about twelve per cent of all blindness in this country is caused by glaucoma, and that an estimated one million people have the disease and don't know it.

Testing the eyes with a tonometer is simple to do and takes about five minutes, they add. Another simple test, the measurement of hearing ability, requires about two minutes and can be performed easily by an office assistant. Among other tests discussed are such familiar procedures as the electrocardiogram, chest x-ray, tuberculin test, the Papanicolaou smear for cervical cancer, urinalysis, rectal examination and the blood sugar test for diabetes..

There is strong medical evidence that diabetes is an inherited disease and they recommend careful screening of relatives of diabetics. To support this contention, a clinical study of 387 apparently healthy relatives of diabetics showed 18 per cent actually had diabetes and another four per cent were probable diabetics.

Huntley, R. R., and White, K. L.; The Use of Screening Techniques in Family Practice. GP, Jan. 1961

SPECIAL HOUSE OF DELEGATES MEETING REVIEWED

A special meeting of the House of Delegates of the Minnesota State Medical Association was held Sunday, January 22, 1961, at the Leamington Hotel in Minneapolis. The meeting was scheduled by vote of the Council to consider several matters concerning Minnesota Medical Service (Blue Shield).

The matters which delegates were asked to consider included the following:

1. The method of selection of members of the corporate body of Blue Shield.
2. A request by Blue Shield for approval of plans for the sale of hospitalization insurance by Blue Shield. The approval of three separate plans was requested as follows:
   a. Through commercial insurance companies.
   b. Through cooperative action with Blue Cross, whereby Blue Shield would sell Blue Cross contracts in addition to Blue Shield. Likewise, Blue Cross would sell Blue Shield.
   c. Through the sale of riders to be attached to and be a part of the Blue Shield contracts, which would provide hospitalization coverage through Blue Shield itself.
3. A request from Blue Shield for the approval of an increase in the income limitation on Blue Shield service contracts.

The Council, at its January 8, 1961, meeting, reviewed Minnesota Blue Shield proposals for the enlargement of its corporate membership. At that time, there had been mutual agreement between the Council and the Board on several matters connected with the corporate structure. These matters included that every county medical society should be represented on the corporate body and that the body should be enlarged to the total number, at least, of the delegates in the House of Delegates.

The Board had proposed, at the January 8 meeting, that the corporate structure be increased by four units, each unit to be composed as originally organized, of two members from each council or district and three members at large, making a total of 21, and four such units making a total of 84. In addition, the Blue Shield Board proposed that 12 additional members should be allocated to Hennepin, Ramsey and St. Louis counties making a grand total of 96 members.

The Board had also proposed that new appointments should be made by nomination of the Board member and the councilor of the district in question and that these nominations could be voted upon, at the discretion of the councilor, by the county society involved.

The Council had accepted these recommendations except to request that voting on new appointments by county societies should be required in every case and not left to the discretion of the councilors and Board members concerned.

This last exception was made part of a resolution which the Council adopted at the January 8 meeting. Also included in this resolution was a request that all current corporate members be reviewed and approved or disapproved by the councilors and county societies involved, in conjunction with the appropriate Blue Shield Board members; and further, that the Blue

Shield Board should agree to change its by-laws to provide for a term of office of five years for its corporate members, with the privilege of re-election.

The Board had accepted the Council version of its proposal for selection of new corporate members, at the January 8 meeting, but it had rejected the other two suggestions regarding the review of present members of the Blue Shield corporation membership and limitation of tenure of the membership.

This same action by the Council, as adopted on January 8, and including the review of current members of the Blue Shield Corporation membership and the limitation on their tenure, was presented to the House of Delegates at the special meeting held on January 22, in the form of a motion by Dr. Les N. Dale of Red Lake Falls. After considerable discussion and the introduction of an amendment which was lost, this motion was adopted by the delegates.

Also approved was a motion made by Dr. Milton M. Howell of Glencoe which urged cooperative action between Blue Cross and Blue Shield in the sale of each other's contracts.

Delegates passed by a vote of 41 to 38, a motion by Dr. John G. Lohmann of Pipestone, to approve the sale of riders to be attached to and be a part of the Blue Shield contract in order to provide hospitalization coverage through Blue Shield itself. The delegates, however, did not approve sale of hospital insurance by commercial companies.

An increase in the income limits for Blue Shield service contracts was also approved by delegates. The motion, which was made by Dr. Albert Fritsche of New Ulm provides for an increase in the income ceiling limits from $2,400 to $3,000 a year for single persons' contracts and from $3,600 to $4,200 for family contracts as provided in plan "A."

Plan "B" income limits were also raised as follows: $3,600 to $4,200 for individuals and $5,000 to $6,000 for families.

The motion passed by the delegates by a vote of 47-33 also established a new "C" plan to provide full service coverage of individuals who make up to $5,200 and families who make up to $7,500 annually.

The delegates voted approval of a motion made by Dr. Howell stating that the approval by the delegates of the sale of riders to the Blue Shield contract which would provide hospitalization coverage and also of the increase in income limits for service contracts under Plans "A," "B" and "C" should become effective the day that the Blue Shield Board accepts the plan for representation approved earlier by the House and not before.

The Chair ruled that the motion was constitutional and it was adopted by a vote of 48 to 36.

A motion was made by Dr. O. L. N. Nelson of Minneapolis to advise the Blue Shield Board that the same fees should be paid for medical services to patients of non-participating physicians as are now paid for medical services to patients of participating physicians and that the 20% reduction should be eliminated.

The motion was carried.

"WHAT IS YOUR DIAGNOSIS?"

HERE'S THE ANSWER:

From Page 102

Hyperglycemic reaction of alarm with hyperpotassemia. (Potassium 9.4) After the electrolyte imbalance had been corrected, laparotomy revealed a ruptured diverticulitis of the sigmoid.

Medical Economics

Edited by the
Committee on Medical Economics
Minnesota State Medical Association
GEORGE EARL, M.D., Chairman

KENNEDY ADMINISTRATION ELDERCARE TRENDS OUTLINED

Senator Harry F. Byrd (D., Va.), Chairman of the powerful Senate Finance Committee, has reaffirmed his stand opposing eldercare through the Social Security system.

"I am convinced this would lead to socialized medicine, with the possibility that it would bankrupt the social security trust fund," said Senator Byrd.

The Virginia lawmaker can be counted upon to maintain his anti-Forand stand during the present session despite any pressure from the Kennedy administration favoring such legislation.

Representative Mills' Stand, A Question Mark

Some observers feel that the future stand which Representative Wilbur Mills (D., Ark.) will take toward eldercare legislation is in doubt. These observers point out that Representative Mills, Chairman of the House Ways and Means Committee, is facing the danger of the loss of his Congressional seat through re-districting. They feel that Representative Mills may bow to administration dictates in spite of the fact that he has previously said that he would have no part in special eldercare legislation which provides medical benefits. This could happen although his name is affixed to the Kerr-Mills Bill which was enacted during the past session of Congress.

Oklahoma Senator Robert S. Kerr, co-author of the Kerr-Mills Bill, has also re-affirmed his stand opposing any legislation which would provide compulsory health care for the aged.

New "Goals for Americans" Issued

Another clue to the line which committees concerned with health legislation may follow is reflected in the recently released "Goals for Americans." This complete report of the president's Commission on National Goals also contains recommendations for health care legislation. Chairman of the Committee is Henry M. Wriston, and the author of the report's blue print of health needs was Dr. James P. Dixon, Jr., President of Antioch College and former health commissioner for the city of Philadelphia. Dr. Dixon is known to be an ardent supporter of medical care for the aged through the Social Security system.

The goals proposed by the recent report are said to be reminiscent of a similar report conducted during the Truman Administration. The recommendation based on the 1952 findings were explicit. Proposals offered by the Commission named by President Eisenhower were more general in nature and did not offer any measures for implementation.

Increased Medical Needs Cited

The recently completed Wriston Commission Report as well as the report issued eight years ago are in agreement regarding U. S. needs for more doctors, more hospitals and better processes for financing health services.

In addition, the Wriston Report states that: Hill-Burton Hospital construction is desirable and should be extended to include other medical facilities. It indicates that "government and private support is necessary for training doctors" and it supports increased emphasis upon mental health and environmental health legislation.

The Wriston Report also urges increased efforts to reduce the cost of medical care. The report says "Extension of medical insurance is necessary through both public and private agencies." Because the report of the commission failed to be specific regarding steps to be taken, AFL-CIO President, George Meany, a member of the Wriston Commission, said that he felt specific eldercare legislation of the Forand-type linked to Social Security should have been recommended.

New Health Team Named

The appointment of Arthur Goldberg as Secretary of Labor is expected to strengthen the new administration's attempts to have Congress pass Forand-type legislation during this session of Congress.

Some observers close to the Washington scene have already noted frequent "informal" conferences of insurance technicians with Kennedy aides for the purpose of learning what modifications in eldercare legislation the Kennedy administration may be expected to propose.

New medical health care for the aged roles by old timers Wilbur Cohen and H. Falk are likely. Both men may be remembered for their activities some ten years ago in conjunction with the Wagner-Murray-Dingel Bill.

Mr. Falk is a special consultant for the Welfare Department of the United Steel Workers Union. He is also a close personal friend of Secretary of Labor Goldberg who served for many years as general counselor for the Steelworkers. It is very likely that Mr. Falk's report on medical care of steelworkers and their families which was presented at the Union's Annual Convention last September will serve as a guidepost in planning national health care legislation for wage earners and their dependents.

Health Legislation Strategy Predicted

Any proposed health care legislation to be considered during the current session of Congress may take the form of an omnibus bill. It is not likely that persons who hope to get such legislation passed will introduce a single play bill to include medical care for the aged in the Social Security structure.

The "package" approach would attach eldercare benefits to legislation which might include funds for construction and operation of medical and dental schools, grants and loans to prepayment medical care enterprises as well as increased Hill-Burton grants.

PHYSICIAN MEDICARE PROCEDURES OUTLINED

It is the responsibility of the Medicare Staff of the Minnesota State Medical Association to stay within the schedule of fees contracted by the Association with the Federal Government. This responsibility also includes proper interpretation of the Joint Directive regulating the Medicare Program. The schedule of fees represents a maximum amount which is payable for a procedure.

Each doctor is encouraged to charge his usual fee for a procedure. In most instances this will be within the maximum amount allowed. When the fee charged is greater than the maximum, the doctor may elect to accept the maximum fee allowed or he may submit a letter of explanation to the Medical Advisory Committee composed of members of the State Association. At no time can the difference between the fee allowed by Medicare and the amount charged by the doctor be collected from the patient or sponsor.

The schedule of fees allowed for a surgical procedure includes a minimum of one visit prior to hospitalization and the surgical procedure and any post-operative care within ninety days following surgery. A fixed percentage of the fee may be allowed for the services of an assistant. Likewise, a fixed amount is also allowed for the services of a consultant.

The Advisory Committee may consider cases which require more than ordinary treatment or those which require the services of a doctor other than the surgeon to perform the pre-operative and post-operative care of the patient. In such cases, the standard schedule no longer is applicable and the Advisory Committee must then determine the amount to be paid. Recommendation of the Medicare Advisory Committee involving unusual cases are subject to the approval of Medicare Headquarters in Washington, D. C.

The Art of Medicine

PR

Carl H. Woyke
Editor

The ? cost of Medical Care...

** Aren't My Health Bills Higher Than They Used to Be?
** How Can I Afford Good Medical Care Today?
** How Can I Get the Most for My Health Dollar?

These are some fairly typical questions which you must answer every day.

When confronted by questions of this nature, do you point out that the real cost of medical care in terms of hours of work to purchase is less today than it was twenty years ago?

This conclusion by the A.M.A. Economic Research Department is based on data from the Bureau of Labor Statistics.

According to the available data, the time that a factory employee worked in 1959 to purchase a given "market basket" of medical care was only sixty-one percent of the amount of time required in 1939, a decrease of thirty-nine percent.

To pay for physicians' services required only fifty-five percent as much working time in 1959 as in 1939. In 1959, a worker could earn the money to pay for a constant quantity of surgeons' services in less than half the time required in 1939.

Optometric examinations and eyeglasses show that about forty-two percent of the time worked in 1939 was required in 1959 for the purchases of these medical goods and services.

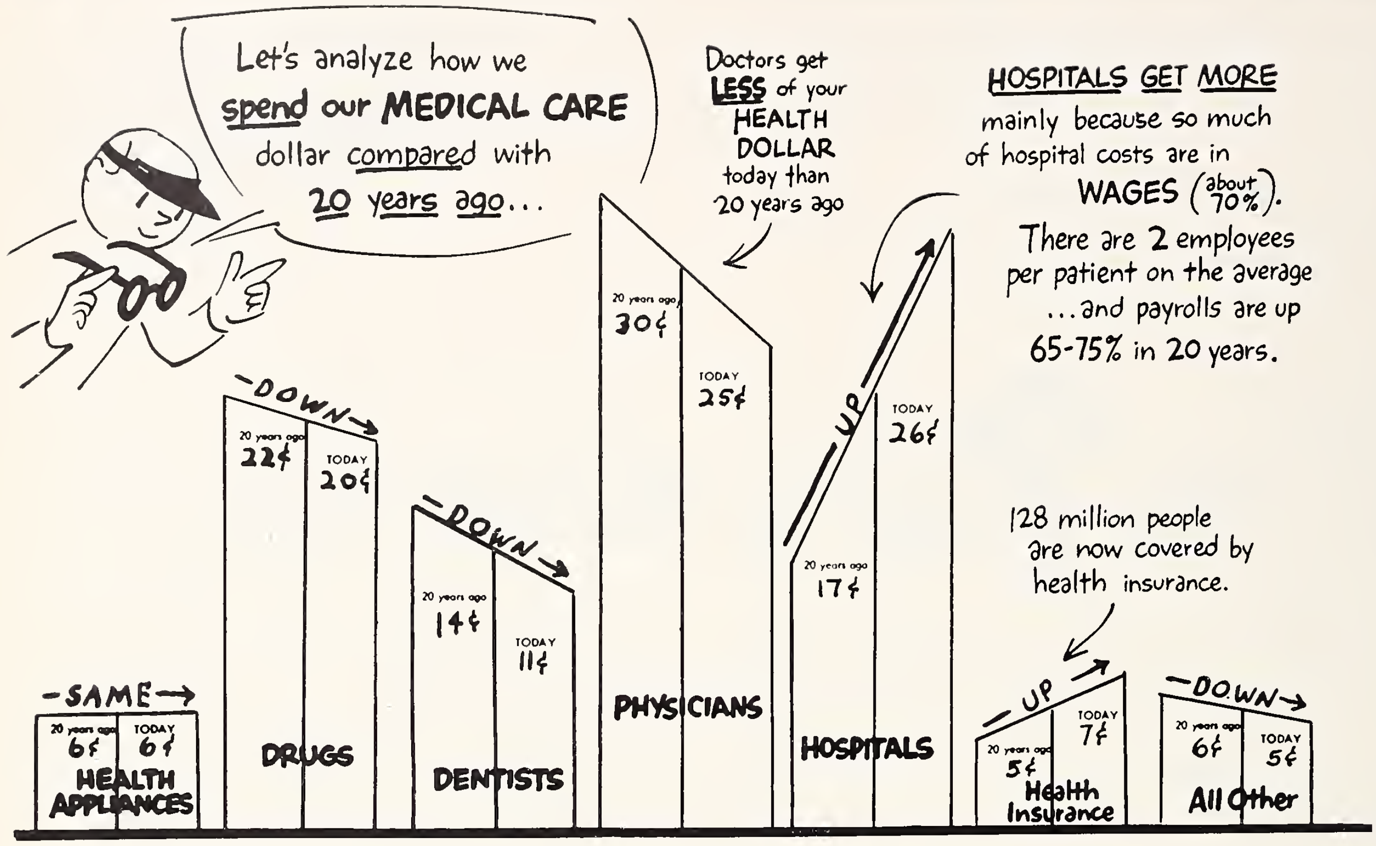
Only one part of medical care — hospital rates — required more working time to cover the increased cost. The factory worker in 1959 put in 122 percent of the time worked in 1939, in order to purchase the same quantity of hospital services.

Qualitative changes in medical practices have resulted in shortened periods of hospitalization. Twenty years ago the average length of stay for a hemorrhoidectomy was 19.6 days. Today, it is 7.6 days. The average length of stay for an appendectomy was 13.5 days; today it is only 6.7 days.

Included in this decrease of real cost of medical care is the higher quality of today's service, research and progress which have produced drugs, technological instruments and improved methods in the management of disease which were non-existent twenty years ago.

To help physicians and the public understand more fully some of the complicated facets of the problem of rising costs, the American Medical Association introduces its newest booklet — "The ? Cost of Medical Care."

EACH DOLLAR SPENT FOR MEDICAL CARE



This sixteen-page cartoon-style booklet touches on such areas as — *How your medical care dollar is spent today compared with twenty years ago; *How progress in medicine spells longer life and better health for all Americans; and *How voluntary health insurance helps Americans meet the cost of unexpected illness.

The assistance of every Minnesota doctor is necessary to distribute this booklet as widely as possible. Since this is a rather expensive pamphlet, the A.M.A. cannot send out unlimited free copies. One free copy will be mailed from the State office to every member of the Association.

Some metropolitan county societies and individual physicians may want larger quantities for distribution than the A.M.A. can provide without charge. Additional quantities will be available for five cents per copy. The remittance must accompany the order. This rock bottom price of five cents is possible only by grouping orders from state societies before routing them on to the printers. Because of this, please try to estimate your needs well in advance.

The A.M.A. will send sample copies to county society secretaries, A.M.A. officers, delegates, trustees, allied organizations, medical school PR contacts, science writers, state colleges and universities, medical and dental bureaus and other opinion leaders. However, local medical societies are encouraged to distribute booklets to local leaders and newspaper editors.

No doubt you'll have many ideas on how to get the booklet into the hands of key people in your area. But here are a few suggestions: your society officers (especially those who are called upon to give speeches before lay groups as they'll want this material for background information) . . . newspaper editors (you'll want to work out locally-slanted stories where possible) . . . Clergymen . . . chambers of commerce . . . agricultural groups . . . and so forth.

Thank you in advance for your assistance in promoting this booklet and the information it contains.

Minnesota Blue Shield

The number of doctors' services paid by Minnesota Blue Shield in 1960 reached an all-time high of 477,170 according to the medical-care plan's annual report.

This was a 21 percent increase over the 1959 figure of 395,696.

However, the total amount paid out in claims was slightly less than in the preceding year ($9,760,806.11, compared with $10,197,592.98 in 1959) despite the larger number of services covered.

Dr. Richard R. Cranmer, executive director of the Blue Shield plan, said the figures reflect the use of benefits covering out-patient x-ray and laboratory services which were added to the Blue Shield contract in October, 1959.

"Blue Shield paid 183,527 claims for these services in 1960," he said. "However, these claims usually represent a single trip to the doctor's office for an x-ray or laboratory test and are consequently smaller than those covering in-hospital medical-care, surgery or obstetrical cases. While these services increased the total number covered by Blue Shield in 1960, the average cost per service went down."

Blue Shield provides coverage for x-ray and laboratory services in the patient's home and the out-patient department of the hospital, as well as in the doctor's office.

Claims paid during 1960 also included: 65,989 in-hospital medical-care services; suture of wounds, 13,597; other skin surgery, 54,218; neurosurgery, 3,069; opthalmology, 4,808; ear, nose and throat, 4,806; tonsillectomies, 6,296; throidectomies, 503; breast, 1,497; cardiovascular surgery, 1,811; gastrointestinal, 1,432; herniotomies, 2,677; appendectomies 2,097; gynecology, 11,645; bones, joints, tendons, 23,293; and endoscopic procedures, 9,095.

The plan also paid for 18,525 obstetrical services, representing more than one-fifth of all births in Minnesota during 1960.

Of the total diagnostic service claims, 73,168 were for diagnostic x-rays and 110,359 were for diagnostic laboratory service.

In addition, claims were paid for 9,029 therapeutic x-ray and isotope services.

A total of 3,763 claims for electroshock therapy were also paid.

Of the 65,989 claims for medical care, 52,466 were for regular medical care; 4,082, for emergency care; and 9,441, for intensive care and consultation.

* * *

With pressures increasing for more and more government intervention in the field of health care, the voluntary programs, so well exemplified by Blue Shield, are facing their severest test.

Blue Shield has met all past challenges in this area and remains the strongest bastion against the government interventionists. It has met these past challenges, in large part, through the support of participating doctors who used every opportunity to advise their patients on the superiority of the Blue Shield voluntary method. By so doing, they helped expand the Blue Shield idea on a wider community basis and strengthened one of Blue Shield cardinal features — broad coverage through the community, including the sick and the well, the young and the old.

No less today, the influence of participating doctors will be crucial in answering the cries of beaurocrats and politicians, seeking a public method for paying what are essentially private responsibilities.

Obviously, doctors have a high stake in withholding this onsweeping tide of government intervention. Much more than the fate of voluntary pre-payment plans are involved. The test may eventually encompass the physician's freedom to practice in the traditional American way, based upon the primacy of the doctor-patient relationship and the freedom of the patient to choose his own physician.

The time is now for doctors in Minnesota to identify themselves even more closely with the Blue Shield program, by pointing out to their patients the superiority of the voluntary system, which includes the patient's freedom of choice of physician and helps the patient maintain his independence and self-respect.

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10 Ichthyosis	3	4	3
Skin Conditions	Benefited	No Benefit	
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10 Neurodermatitis	10	—	

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1. Weissberg, G.: Clin. Med., June 1960.

2. Spoor, H. J.: N. Y. St. J. Med., Oct. 15, 1958.

**patent pending*
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Medical Examiners

FOUR PERSONS SENTENCED IN MINNEAPOLIS ON ABORTION CONSPIRACY CHARGE

Re: State of Minnesota —vs— Ruby L. Washington, Reva J. Campbell, Ronald L. Lavine and Edward M. Cohen.

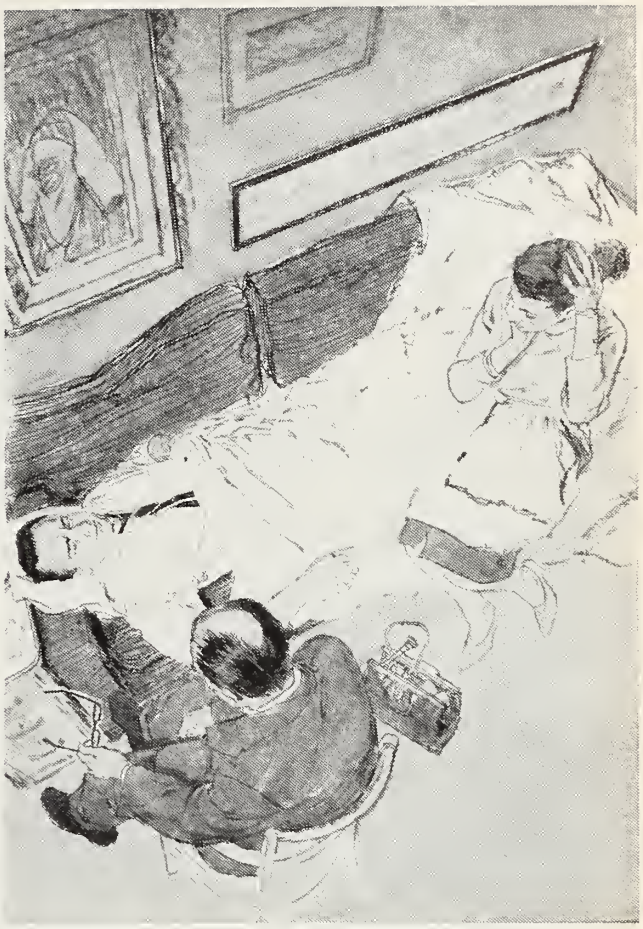
On January 18th, 1961 the above defendants, who are all residents of Minneapolis, were sentenced to various terms by the Hon. Lindsay G. Arthur, Judge of Minneapolis Municipal Court, pursuant to their pleas of guilty to a complaint charging them with the crime of unlawfully conspiring one with the other to commit the crime of abortion. Ruby L. Washington, 35, 614 Humboldt Ave. N., and Reva J. Campbell, 35, 3818 Clinton Ave., were ordered to serve terms of 90 days and 60 days respectively in the Minneapolis Women's Detention Home. Judge Arthur also revoked the stay of execution of a 90 day sentence for vagrancy previously imposed by the Court on October 10th, 1960 in regard to the defendant Campbell. Ronald L. Lavine, 28, 2509 Pillsbury Ave., a registered pharmacist, and Edward M. Cohen, 29, 2516 Humboldt Ave. S., a licensed attorney, were sentenced by the Court to terms of 90 days and 60 days respectively in the Minneapolis Workhouse, the execution of the sentences being stayed however on the good behavior of the defendants. Judge Arthur stated that he was staying the sentences of the defendants Lavine and Cohen because he felt sure each of them would be facing further disciplinary proceeding before the proper professional licensing board.

The Minnesota State Board of Medical Examiners and the Minneapolis Police Department conducted a joint investigation after information was received that an abortion was to be performed at a Minneapolis motel for a fee of $350 on January 13th, 1961. The cooperation of the intended patient was solicited with the result that the defendant Washington was arrested in the motel room as she was making preparations to do the abortion. Two catheters and a vaginal speculum were found on a chair and the $350 in marked currency was discovered in her purse. The defendant Campbell was arrested after she was located waiting in an automobile outside of the motel.

According to the information contained in signed statements given by each of the defendants, after the intended abortion victim, who is 23 years of age, learned from a physician that she was pregnant, Lavine attempted without success to terminate her pregnancy by having her take various pills and tablets. Lavine then consulted the defendant Cohen who arranged through an acquaintance, Reva Campbell, for the abortion to be performed by the defendant Washington, her fee of $350 to be furnished by Lavine. Upon the completion of the investigation, a criminal complaint was signed on January 18th by a representative of the Minnesota State Board of Medical Examiners charging the defendants with the crime described above. Neither the defendant Washington nor the defendant Campbell is licensed to practice any form of healing in the State of Minnesota.

Minnesota State Board of Medical Examiners

J. P. Medelman, M. D.,
Secretary



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No absolute contraindications to the use of Dornwal are known. There have been no reports or evidence of habituation, addiction or drug tolerance in animal or clinical studies. Dornwal is relatively free from untoward effects when administered at recommended dosages.

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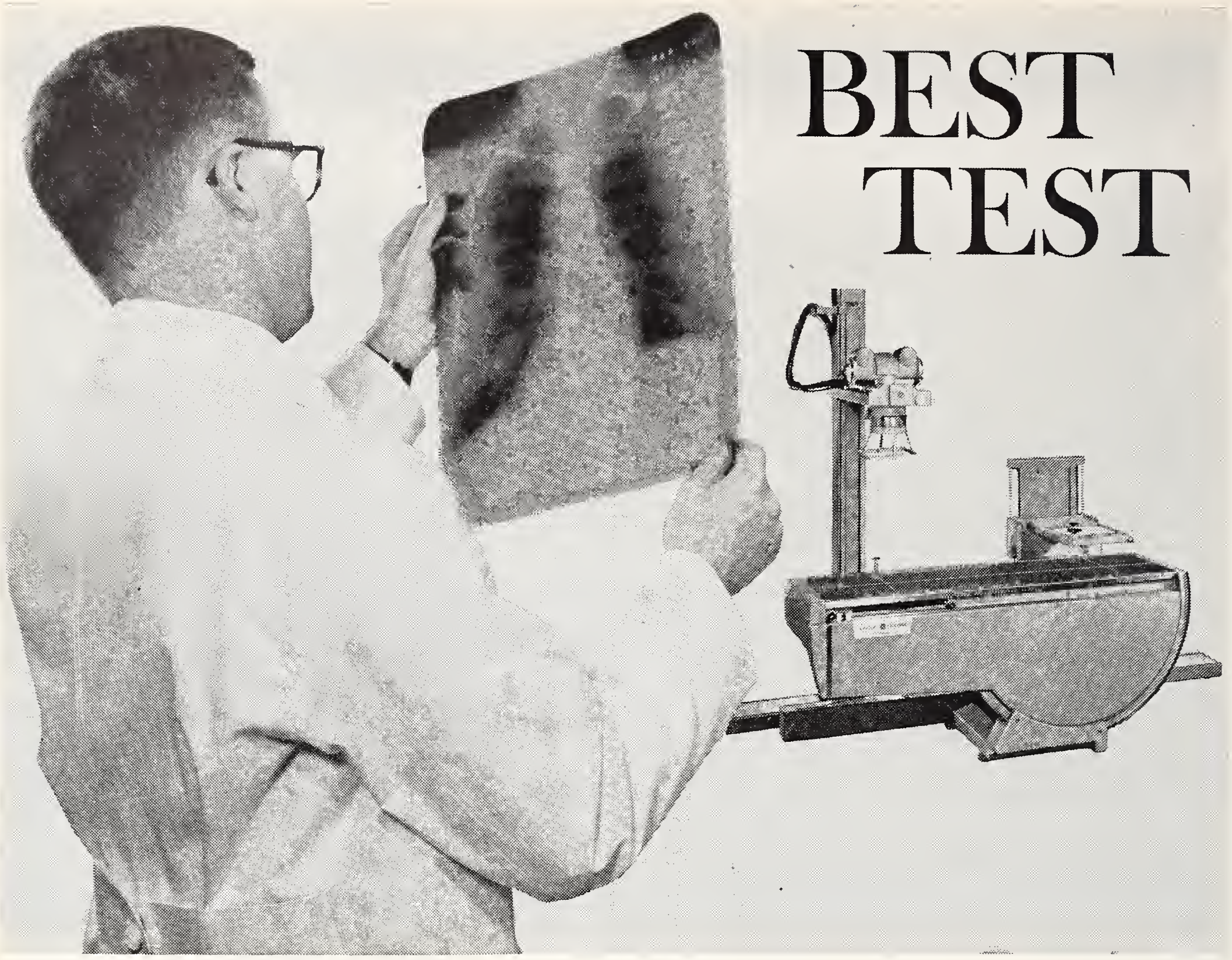

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In Memoriam

JAMES M. HAYES

Dr. James M. Hayes, President of the Minnesota State Medical Association in 1938, died in his home in San Diego, California, January 9, 1961. Doctor Hayes was eighty years of age at the time of his death.

Dr. Hayes was born in Millville, Minnesota, in 1880. He received a Bachelor of Science degree from Carleton College, Northfield, and his medical degree from the University of Minnesota in 1910. After a year's internship at the University Hospital, he practiced for five years in Brown's Valley, Minnesota before entering a five-year fellowship in surgery at the Mayo Clinic. He received a master's degree in surgery in 1921.

He practiced general surgery in Minneapolis from 1921 to 1955 when he joined his brother, Dr. E. W. Hayes, also a physician, in California.

Dr. Hayes became a member of the State Medical Association in 1920. His first state association appointment came in 1928 when he was selected for the Committee on Public Policy and Legislation under the chairmanship of the late Dr. Herman M. Johnson. He remained on this committee until 1944.

In 1934 he was elected Councilor of the Sixth District and in the same year he became Chairman of the Committee on Industrial Health. He also served in 1934 as a member of a special Committee to Study Medical Needs in Isolated Communities. He served on the Industrial Health Committee until 1937 and as chairman of the Interprofessional Relations Committee in 1940.

He was elected President of the Minnesota State Medical Association for the year 1938 and subsequently served as chairman and later member in accordance with an alternate delegate to the American Medical Association. In 1941 he was elected delegate and remained so through 1943.

It was during his term of office as President, and with his active assistance and support, that state headquarters of the Association were moved to the Lowry Medical Arts Building in St. Paul and an enlarged program of public health education was launched.

Dr. Hayes left for California in 1955, a year after he had been elected to Life Membership in the Association. He was awarded the Association's highest recognition, its Distinguished Service Medal in 1955 and he became an honorary member of the Los Angeles County Medical Association in 1958. This last honor was bestowed by a special and unique action of the Los Angeles Association since no regular category of membership existed under which he could be accepted for a non-dues-paying member.

One of the milestones in his life was his service as Captain in the U. S. Medical Corps with Base Hospital 26 as a member of Casual Operating Team Number 13 in France, 1917 to 1919.

He was a member of many professional societies including the American College of Surgeons, the American Association for the Study of Goitre, the Western Surgical and the Minneapolis Surgical Societies, the Mayo Clinic Alumni Association, the Minnesota Pathological Society and the Minneapolis Clinic Club. He was president of the Minneapolis Surgical and Clinical Clubs, the Mayo Association and many others. He was also president of the Hennepin County Medical Society and a member of Kiwanis, the Knights of Columbus and Phi Beta Pi, among many other comparable groups. He was assistant professor of surgery at the University of Minnesota from 1930 to 1934 and a member of the staffs of the University and St. Mary's Hospitals.

Survivors include his wife, Catherine; his daughter, Mrs. Louise Vanderliet, Minneapolis; and a brother, Dr. E. W. Hayes, Monrovia, California.

H. H. ALBRECHT

Dr. Harold H. Albrecht, Lindstrom physician, was killed when his light plane crashed near Ironwood, Michigan. The wreckage of the plane along with Dr. Albrecht's body were found January 21, 1961. Dr. Albrecht had been missing since January 19, 1961. He was forty-seven years old at the time of his death.

He was born in Long Prairie, Minnesota, and received his preliminary education from the Hutchinson and St. Peter High Schools. He attended St. Olaf College in Northfield from which he graduated in 1937 with a Bachelor of Arts degree. His medical education was obtained at Marquette School of Medicine in Milwaukee, Wisconsin, from which he graduated in 1942. Dr. Albrecht interned for one year at St. Mary's Hospital in Duluth, Minnesota.

Dr. Albrecht was a member of the East Central Medical Society, the Minnesota State Medical Association and the American Medical Association.

Survivors include his wife, Joyce; two sons, Steven and David; and a daughter, Kathleen, all of Lindstrom.

CHARLES KOENIGSBERGER

Dr. Charles Koenigsberger, a physician in Mankato for over thirty years died in a Mankato Hospital, December 18, 1960. He was seventy-three years of age at the time of his death.

Doctor Koenigsberger was born in San Francisco, California, on May 18, 1887 and spent his boyhood in Deadwood, South Dakota. He received his medical degree from the University of Michigan in 1910 and served his internship at Mt. Sinai Hospital in New York City.

He practiced medicine in the Black Hills area of South Dakota until 1917, when he was commissioned a lieutenant in the medical corps of the U. S. Navy. He served at the Great Lakes Naval Station in the Pacific and in China until 1920.

For the next six years he practiced medicine in North Dakota and joined the Mankato Clinic staff December 1, 1927. He also studied at the Mayo Clinic for six months.

He was a member of the Blue Earth County Medical Society and the American Medical Association and was granted life membership in the Minnesota State Medical Association in 1958.

Survivors include his wife, Kora; three children, Captain Charles of Great Lakes Training Center, Ill., Pat of Santa Monica, California, and Mrs. Robert Uresta of Hopkins; and ten grandchildren.

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Supplied: 200 mg. yellow scored tablets, and 100 mg. pink tablets, each in bottles of 100 and 500.

P.S. For the "Genericist", Dornwal is amphenidone

No absolute contraindications to the use of Dornwal are known. There have been no reports or evidence of habituation, addiction or drug tolerance in animal or clinical studies. Dornwal is relatively free from untoward effects when administered at recommended dosages.

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JOHN KOSIAK, JR.

Dr. John Kosiak, Jr., prominent Minneapolis physician died of a heart ailment at his home on January 12, 1961, at the age of forty.

Dr. Kosiak was born in Chisholm, Minnesota and obtained his preliminary education at Chisholm High School and the University of Minnesota. His medical degree was obtained at the University of Minnesota School of Medicine from which he graduated in 1950. He interned for one year at Wilson Memorial Hospital in Johnson City, New York.

Dr. Kosiak served with the armed forces during World War II. He was a partner in the Palen Clinic in Minneapolis.

Dr. Kosiak was a member of the Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Survivors include his wife, Kathleen; five sons, Jon, Kevin, Donald, Daryl and Brian; and three daughters, Jennifer, Maureen and Karri; his father, John Kosiak, Sr., Chisholm; three sisters, Mrs. Peter (Mary Ann) Rajacich and Mrs. Anthony (Dr. Irene Kosiak) Perpich, both of Virginia, and Mrs. Eva Robinson of Chisholm; and two brothers, Dr. Michael Kosiak of Minneapolis and Dr. William Kosiak of Two Harbors.

GEORGE L. MERKERT

Dr. George L. Merkert, Minneapolis physician, died January 4, 1961. He was sixty-eight years of age at the time of his death.

Dr. Merkert received his medical education at the University of Minnesota School of Medicine from which he graduated in 1917.

He was a member of the medical staff of Lutheran Deaconess Hospital, a member of Phi Rho Sigma medical fraternity, the Zuhrah Temple, Scottish Rite, Minnehaha Masonic Lodge, the Chicago-Lake Business and Professional Men's Association, the Academy of General Practice, the American Society of Clinical Pathologists, the Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Survivors include his wife, Mary Elizabeth; a son, Dr. George L. Merkert, Jr., Colorado Springs; two daughters, Mrs. Robert E. Harlin, Torrance, California, and Mrs. Eugene C. Medlin, Vista, California; two brothers Walter, Duluth, and Charles, Minneapolis; and two sisters, Irene and Emily Merkert, both of Minneapolis.

WILLIAM P. SADLER

Dr. William P. Sadler, Minneapolis physician, died January 16, 1961, at the age of sixty-five.

Dr. Sadler was born in 1895 at Van Buren, Arkansas. His preliminary education was obtained at Van Buren High School and the University of Arkansas. His medical education was obtained at Johns Hopkins University from which he graduated in 1921. He served one year internship at Johns Hopkins Hospital in Baltimore, Maryland.

Dr. Sadler had served as chief of staff, Northwestern Hospital, and chief of obstetrics and gynecology at General Hospital.

He was a former associate clinical professor at the University of Minnesota, a retired captain of the Navy Medical Corps and a fellow in the American College of Surgeons.

Dr. Sadler was a member of the Minnesota Academy of Medicine, the Hennepin County Medical Society, the Minnesota State Medical Association, and the American Medical Association.

Survivors include his wife, Agnes B.; a daughter, Mrs. Alan J. Wurts, Pittsburgh, Pa.; a son, Dr. William P. Sadler, Jr., Charlottesville, West Virginia; and three sisters, Mrs. Henry C. Faber and Mrs. R. S. Wilson, both of Van Buren, Arkansas and Mrs. William E. Hicks, Shreveport, Louisiana.

JEROME T. SYVERTON

Dr. Jerome T. Syverton, Head of the Department of Bacteriology and Immunology at the University of Minnesota Medical School died in New York of a heart attack. Dr. Syverton died January 28, 1961, at the age of fifty-three. He had been attending a scientific meeting in New York and was due to return to Minneapolis.

Dr. Syverton was an internationally renowned authority on viruses and polio vaccines and much of his research was aimed at the causes and control of cancer.

In 1959, it was announced that research directed by Dr. Syverton had uncovered the way in which viruses attack inside the human body. Described as a "milestone of great significance" the discovery could help solve the mystery of the role viruses play in causing cancer.

Dr. Syverton was born at Courtenay, North Dakota, in 1907. He was a graduate of the University of North Dakota and Harvard University, from which he received his M.D., in 1931.

After an internship at Duke University Hospital, he served at the Rockefeller Institute of Medical Research, Vanderbilt University, University of Rochester Medical and Dental School, and the School of Medicine, Louisiana State University, where he was Head of the Department of Microbiology, 1947-48.

In 1948, he moved to Minneapolis to become a Professor and Head of the Bacteriological Department of the University of Minnesota.

The recipient of numerous awards and research grants, including $135,000 from the National Foundation for Infantile Paralysis in 1956 and $99,460 and $108,880 from the March of Dimes, Dr. Syverton also served on many professional boards and committees. He was a consultant to the United States surgeon general and a member of the National Advisory Allergy and Infectious Disease Council.

He was the author of scientific articles on viruses, vaccines and infectious diseases. During World War II he served with the naval reserve and was on duty with a naval medical research unit in the Pacific.

He was a Knight of the Order of St. John and a member of the Lafayette Club, the Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Surviors include his wife, Mildred and two daughters, Gail and Laurie, all of Minneapolis.

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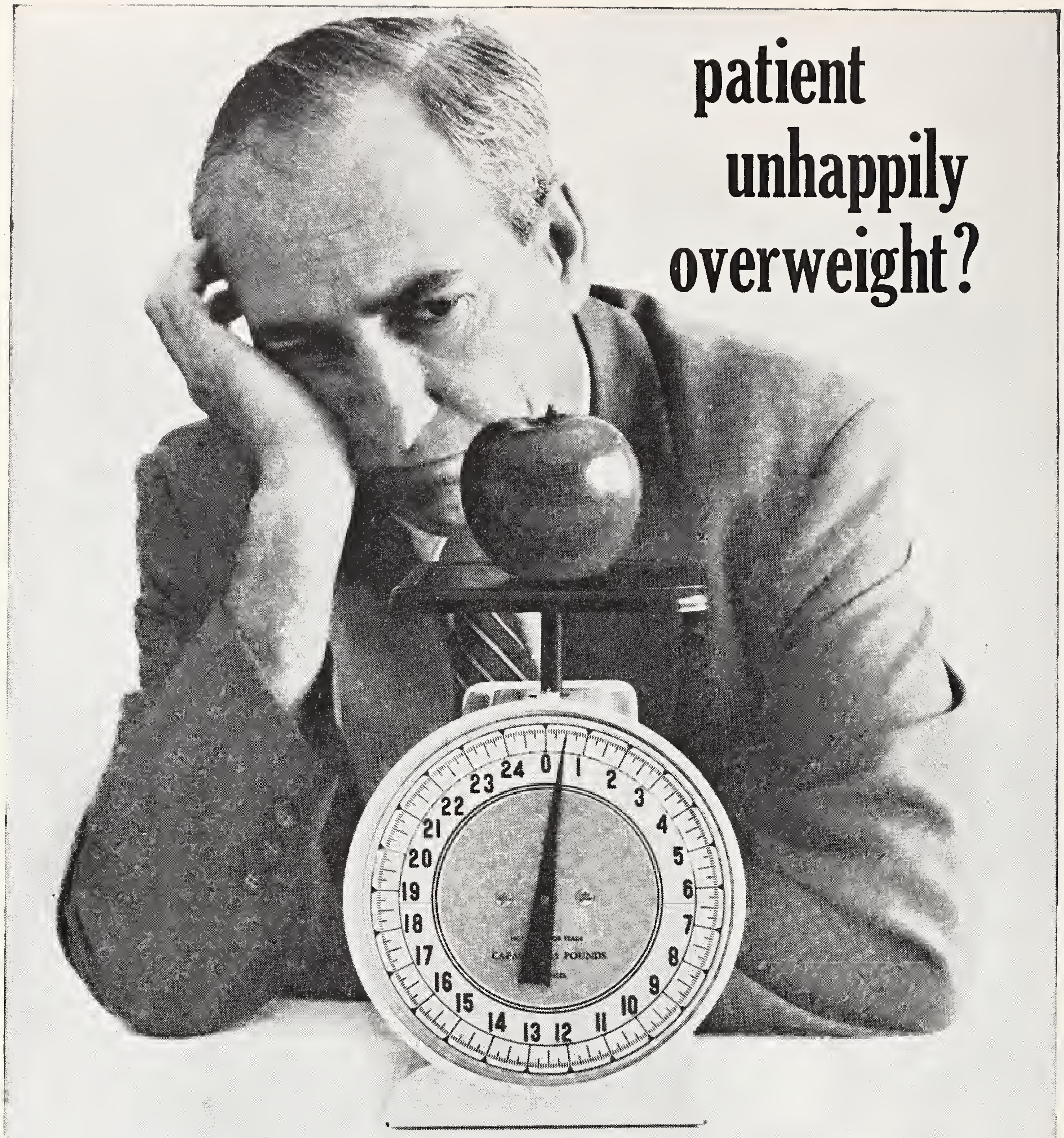

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[1] Douglas, H. S.: West. J. Surg. 59:238 (May) 1951.

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Woman's Auxiliary

MID-WINTER BOARD MEETING REVIEWED

The Mid-Winter Board Meeting of the Woman's Auxiliary to the Minnesota State Medical Association was held in the Ramsey Room of the Lowry Hotel, St. Paul, on January 24, 1961. Approximately seventy ladies braved the 21° below zero weather to attend the meeting.

The meeting was called to order by Mrs. Walter P. Gardner, St. Paul, State President, and Mrs. Wm. Gjerde, Lake City, led those present in the Auxiliary Pledge.

The business session was held first with President's Reports from the following counties given. Hennepin, McLeod, Mower, Nicollet-LeSueur, Ramsey, Range, Red River Valley, St. Louis, Scott-Carver, Southwestern, Wabasha, Winona and Zumbro Valley. These reports were then placed on file.

Mrs. Elmer Hill, State Treasurer, then gave her report, followed by reports from State Committee Chairmen.

The following committee reports were given: Mrs. Bernard Flesche, Lake City, A.A.P.S.; Mrs. Wm. Finkelnburg, Winona, A.M.E.F.; Mrs. Haddon M. Carryer, Rochester, Bulletin; Mrs Albert C. Kelly, St. Paul, Civil Defense; Mrs. Karl Anderson, Minneapolis, Community Service; Mrs. Theodore Smith, Minneapolis, Health Careers; Mrs. Winston Lindberg, Minneapolis, Legislation; Mrs. Wallace A. Merritt, Rochester, Membership; and Mrs. F. E. Ellison, Monticello, Mental Health.

Dr. Robert H. Monahan, St. Paul, was the first speaker on the program. He presented a report on the Pre-School Medical Survey of Vision and Hearing. During his report he stated that the Pre-School Survey has requested the Auxiliary's Executive Board to give attention to stimulating annual surveys of four-year-olds. The State Level Office of the Survey will procure supplies and give instruction to volunteers. Local leadership is needed to enlist volunteers to do the screening, and additional volunteers to make a community canvass; to secure financial sponsorship; to make arrangements; to carry on publicity; and to enlist the cooperation of local authorities in Health, Education and Welfare.

Mrs. John R. Stoltze, Stillwater, Executive Secretary of the Survey, also was present at the meeting. She gave a short summary on a new testing machine being developed by a few Mayo Clinic doctors.

Following Dr. Monahan, Mrs. Gardner presented Dr. Leo Nash, St. Paul, Chairman of the Committee on Aging of the Minnesota State Medical Association. Dr. Nash was one of the delegates from Minnesota to the White House Conference on Aging.

Dr. Nash reported that there were between 1700 - 1800 delegates attending the Conference. Minnesota had 36 delgates. These delegates were divided into twenty subject groups. The group studying medical care under social security had a final vote of 176 for and 99 against.

He also stated that Minnesota is one of the four or five leading states in having developed workable plans in caring for its aged.

All unfinished business was then taken care of. Mrs. Gardner announced that Mr. Charles Johnson, Field Secretary for the American Medical Association, will be in the state from February 20 - 24 to meet with the Legislative Chairmen of the State Association and Woman's Auxiliary to organize the strategy concerning present legislation.

The meeting was then adjourned for Luncheon in the Silver Room. A surprise visit was made by Miss Muriel Lux, St. Paul Winter Carnival Queen of the Snows whose reign ended January 31, 1961. Miss Lux, in full regalia, visited with the women for about five minutes, before leaving for another luncheon appearance.

The Luncheon speaker was Mr. Boris Sokoloff, Manager of the Minneapolis Symphony. He gave a very interesting report on the business side of the Symphony. He explained the procedure of procuring a new musical director and what his duties would be. Mr. Sokoloff also outlined a few programs in the near future.

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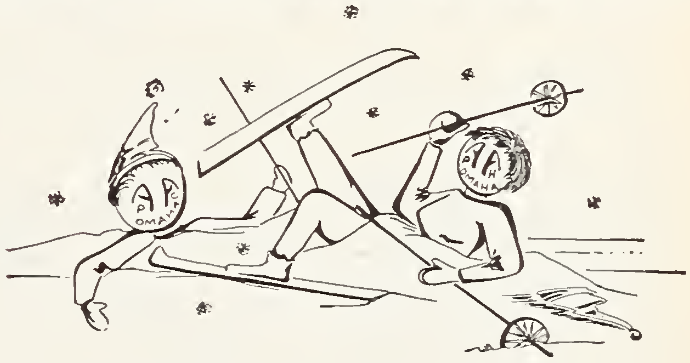

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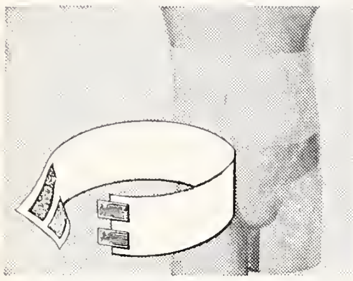

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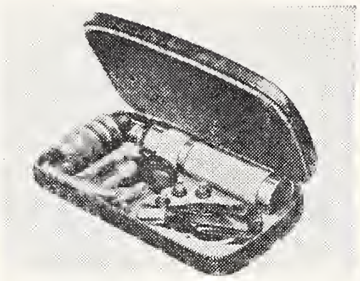

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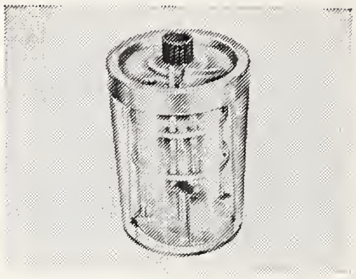

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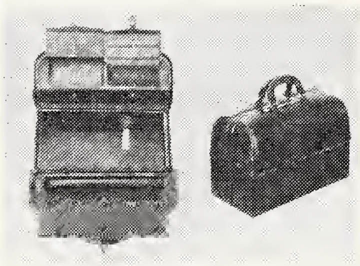

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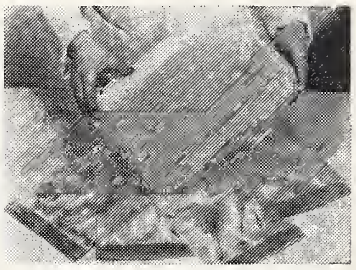

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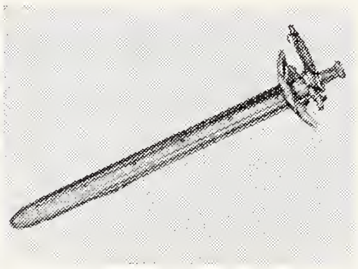

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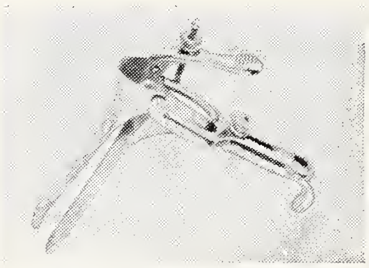

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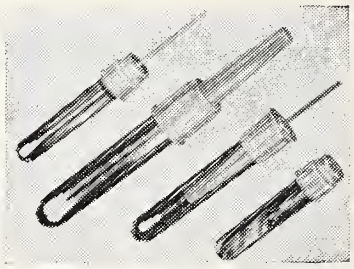

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Meetings and Announcements

INTERNATIONAL

The Fourth International Conference on Medical Electronics combined with The Fourteenth Annual Conference on Electrical Techniques in Medicine and Biology, sponsored by: The Joint Executive Committee on Medicine and Biology . . . IRE-AIEE-ISA; Under the auspices of The International Federation for Medical Electronics and Organized by the Institute of Radio Engineers through its Professional Group on Bio-Medical Electronics, The Waldorf-Astoria, New York City, New York, July 16-21, 1961. For further information write to the Fourth International Conference, Institute of Radio Engineers, 1 East 79th Street, New York, New York.

* * *

The U.C.L.A. School of Medicine, in cooperation with the Hebrew University-Hadassah Medical School in Jerusalem and the Beilinson and Tel Hashomer Hospitals in Tel-Aviv, offer a Clinical Postgraduate Program in Israel, April 20 - May 7, 1961. Inquiries concerning the Israel tour and program may be addressed to: Dean of Continuing Education in Medicine, U.C.L.A. Medical Center, Los Angeles 24, California.

NATIONAL

The American College of Surgeons will hold the last of its four 1961 Sectional Meetings in Winnipeg, Manitoba, Canada, at the Fort Garry Hotel, April 6-8, 1961. Additional information about program and registration may be obtained by writing to William E. Adams, M.D., Secretary, American College of Surgeons. 40 East Erie Street, Chicago 11, Illinois.

* * *

The Chicago Ophthalmological Society, Annual Clinical Conferencc, Drake Hotel, Chicago, Illinois, May 19-20, 1961. For further information write Mrs. Mary E. Ryan, 1150 North Lorel Avenue, Chicago 51, Illinois.

* * *

The West Virginia Academy of Ophthalmology and Otolaryngology, Fourteenth Annual Spring Meeting, Greenbrier Hotel, White Sulphur Springs, West Virginia, April 6-8, 1961. For further information write Dr. Worthy W. McKinney, 109 East Main Street, Beckley, West Virginia.

* * *

Fifth Post-Graduate Course on Fractures and Other Trauma, Chicago Committee on Trauma of the American College of Surgeons, April 19 - 22, 1961, John B. Murphy Memorial Auditorium, 50 East Erie St., Chicago. For further information write Dr. John J. Fahey, Chairman of the Committee on Post-Graduate Course on Fractures and Other Trauma, 1791 W. Howard St., Chicago 26, Illinois.

* * *

Summer Camp for Diabetic Children, under the auspices of the Chicago Diabetes Association, July 16 - August 6, Holiday Home, Lake Geneva, Wisconsin. Boys and girls from eight through fourteen years of age eligible. Application may be obtained from, Chicago Diabetes Association, 620 North Michigan Avenue, Chicago 11, Illinois.

Symposium on Pediatric Surgery, May 4 - 6, 1961, New York University Medical Center, 550 First Avenue, New York City, New York.

* * *

Thirty-Eighth Annual Conference, American Physical Therapy Association, July 2 - 7, 1961, Palmer House, Chicago, Illinois. For further information write: Miss Lucy Blair, Executive Director, 1790 Broadway, New York 19, New York.

REGIONAL

Clinical Reviews, Mayo Clinic and Mayo Foundation, April 10 - 12, 1961, Mayo Clinic, Rochester, Minnesota. For further information write: Clinical Reviews Committee, Mayo Clinic, Rochester, Minnesota.

* * *

Medical Continuation Courses, Center for Continuation Study, University of Minnesota. April 17 - 19, Internal Medicine for Internists; April 20 - 22, Otolaryngology for General Physicians; May 1 - 3, Ophathalmology for Specialists; May 8 - 10, Gynecology for General Physicians; May 11 - 13, Surgery for Surgeons; and May 15 - 19, Proctology for General Physicians. For further information write: Director, Department of Continuation Medical Education, 1342 Mayo Memorial, University of Minnesota, Minneapolis 14, Minnesota.

CHEST PHYSICIANS ESTABLISH FUND TO ASSIST CUBAN MEMBERS

At the meeting of the Board of Regents of the American College of Chest Physicians held in Washington, D.C., on November 28, 1960, a resolution was adopted to establish a relief fund for Cuban members of the College who have been exiled temporarily from their country.

The Board of Regents voted to contribute $5,000 to launch the fund and contributions are being solicited from College members and others who are interested. The Cuban Chapter of the College was founded in 1940 and now has 74 members.

'U' GETS $92,000 GRANT FOR TV CANCER RESEARCH SERIES

The University of Minnesota has received a Community Cancer Demonstration Project grant of $92,000 from the United States Public Health Service for the production of thirteen television films relating cancer research to cancer control.

The programs will be designed to report on important research into the causes and treatment of cancer and show a general television audience how basic cancer research can ultimately be useful in the early detection and successful treatment of cancer.

Filming for the programs will be done at major cancer research centers throughout the country. The completed series will be distributed nationally for broadcast by educational and commercial television stations. The series is expected to be completed by late fall.

This will be the first television series on national scale produced by the University.

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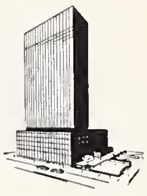

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The Physician's Diary

Dr. R. A. Sanford, Mankato, was re-elected president of the St. Joseph's Hospital Medical staff at its annual meeting. Other officers elected were **Dr. H. J. Setzer**, vice president; and **Dr. O. D. Anderson**, secretary. Members of the executive committee re-appointed include **Dr. M. I. Howard**, chairman; **Dr. A. A. Schmitz**; and **Dr. J. C. Von Drasek**.

* * *

A Slayton physician, **Dr. D. D. Nywall**, was the guest speaker at a Father and Sons meeting of the Masons of Murray County. The program was designed to be of special interest to the younger men and boys as well as to the members of the lodge.

* * *

Dr. Charles Pelzl, Pine River, has recently attended a medical seminar at the University of Colorado Medical Center.

* * *

The Stearns County Commissioners recently reappointed **Dr. Charles F. Brigham**, St. Cloud as county physician. **Dr. John B. Beuning**, St. Cloud, was also appointed to the Board of Health.

* * *

The Minnesota Radiological Society recently named **Dr. W. E. Macklin**, Willmar, as an alternate councilor to the American College of Radiology. Dr. Macklin will serve a one year term. He took office the first of last month.

* * *

Dr. Magnus C. Petersen, retired superintendent of the Rochester State Hospital and now in the private practice of psychiatry in Rochester participated in a ceremony honoring a former Rochester State Hospital colleague held in Oslo, Norway. Dr. Petersen also visited his native Denmark.

* * *

The Thief River Falls Chamber of Commerce has elected **Dr. George Martin** as president of the Chamber.

* * *

Dr. Philip Hench, retired Mayo Clinic physician, recently spent two or three weeks in Moscow, Stalingrad, Czechoslovakia and Germany. Dr. Hench attended a congress on rheumatology in Moscow. He was one of only two physicians from the western hemisphere attending the Russian meeting.

* * *

The first woman to be named Chief of Staff of a Duluth Hospital is **Dr. Elizabeth Bagley**. Her election was announced at the annual dinner meeting of St. Luke's Hospital medical staff. Dr. Bagley is a member of the only Duluth family that includes three practicing physicians. Her father, **Dr. William R. Bagley** began his practice in Duluth sixty-three years ago and is now in practice with his son, **Dr. Charles M. Bagley**. Dr. Elizabeth Bagley is also a sister-in-law of **Dr. C. L. Oppegaard**, Crookston, president of the Minnesota State Medical Association.

* * *

Dr. R. A. Belcher has been elected president of the medical staff of St. Gabriel's Hospital in Little Falls. Other officers for the coming year are **Dr. J. K. Heid**, vice president; **Dr. Kent Westley**, secretary; and an executive committee which includes **Dr. Belcher**, **Dr. C. J. Dillenburg**, **Dr. Milo Hansen** and **Dr. O. C. Bolstad**.

* * *

A former Forest Lake physician, **Dr. N. M. Mensheha**, now of Minneapolis, has been awarded a cancer fellowship at the University of Minnesota by the American Cancer Society. The one-year fellowship will follow the completion of a three-year fellowship in obstetrics and gynecology at the University of Minnesota in June. The selection — the only one in Minnesota — was made because of Dr. Mensheha's outstanding work in the field of obstetrics with special emphasis on cancer treatment.

* * *

Dr. Harvey T. Petraborg, Aitkin, has been named recipient of the R. J. Bolen Outstanding Citizens Award at a meeting of the Aitkin Lions Club. R. J. Bolen, formerly of Aitkin gave the cup to the club to be awarded each year to Aitkin's outstanding citizen. There are no eligibility requirements for the award and the winner is selected by a committee on the basis of community service and betterment.

* * *

Dr. Frank Kiesler, superintendent of the Tri-County Mental Health Center at Grand Rapids, was guest speaker at the Mando Supervisors Club in International Falls. Dr. Kiesler's topic was the purpose and beginning of mental health centers. He stated that there are now fourteen such centers in Minnesota, specializing mainly in out-patient service.

* * *

A radiologist, **Dr. Joseph W. Burnett**, has been elected president of the Union Hospital staff in New Ulm at the annual meeting. Other new officers are vice president, **Dr. C. A. Saffert** and secretary **Dr. John Baker.**

* * *

Dr. F. J. Boyle was guest speaker at the meeting of the Circa Studi group in Springfield recently. He spoke on progress in medicine.

* * *

Dr. J. C. Brodhun has been elected president of the Olmsted Medical Group at its annual meeting. He succeeds **Dr. H. A. Wente**. Other officers are **Dr. J. E. Verby**, vice president and **Dr. J. O. Fluegel**, secretary-treasurer. Ten physicians comprise the partnership. In addition to the officers, other partners are Drs. Wente, **J. R. Doyle**, **H. F. Burich**, **M. K. Campbell**, **W. R. Weyhrauch**, **L. T. Wood** and **W. E. Kaese**. Associated in practice but not partners are **Drs. Mary Pougiales** and **D. L. Orn.**

* * *

Dr. Frederick P. Arny has been elected Chief of Staff at Midway Hospital in St. Paul. It is the first time in the hospital's history that a general practitioner has been elected as the hospital's chief of staff.

A Mankato physician, **Dr. J. L. Marso,** addressed the medical record librarians of Districts Four and Six at their regional meeting at St. Joseph's Hospital in Mankato. Obstetrical problems was the topic of Dr. Marso's talk. About twenty-five record librarians and personnel attended.

* * *

Dr. George Bingham of Bird Island has been elected chief of staff at the Renville County Hospital. Dr. Bingham is also secretary of the Renville-Redwood County Medical Society as well as Renville County health officer.

* * *

Dr. James J. Lawton, associate professor of child psychiatry and pediatrics at the University of Minnesota, spoke at a meeting of the St. Joseph's Hospital Auxiliary in St. Paul.

* * *

The president of the Minnesota Academy of General Practice, **Dr. F. J. Dickson,** Proctor, spoke before the Commission on Membership and Credentials of the American Academy of General Practice in New Orleans.

* * *

Dr. E. W. Ostergren, St. Paul, spoke before the Home and School Association of Archbishop Murray Memorial High School in St. Paul. Dr. Ostergren's talk concerned the "Health Habits of Today's Teenager."

* * *

A psychiatrist at the Mayo Clinic, **Dr. Edward M. Litin,** spoke at the winter meeting of Mt. Sinai Hospital (Minneapolis) auxiliary. Dr. Litin spoke on "Relax and Enjoy Your Status."

Dr. Wayne Campbell, Waseca, has been named Waseca county chairman for the 1961 Heart Fund Drive.

* * *

Dr. Warren Lawson, Minneapolis, warned members of the P.T.A. of Whitney School (Minneapolis) to poison proof their homes. Dr. Lawson stressed that a total of 600,000 children under five years of age are poisoned each year. He listed twelve measures to take to "poison proof the home."

* * *

Dr. James S. Hunter, Jr. and **Dr. Ray W. Gifford, Jr.,** have left the staff of the Mayo Clinic. Both physicians have remained in Rochester indefinitely.

* * *

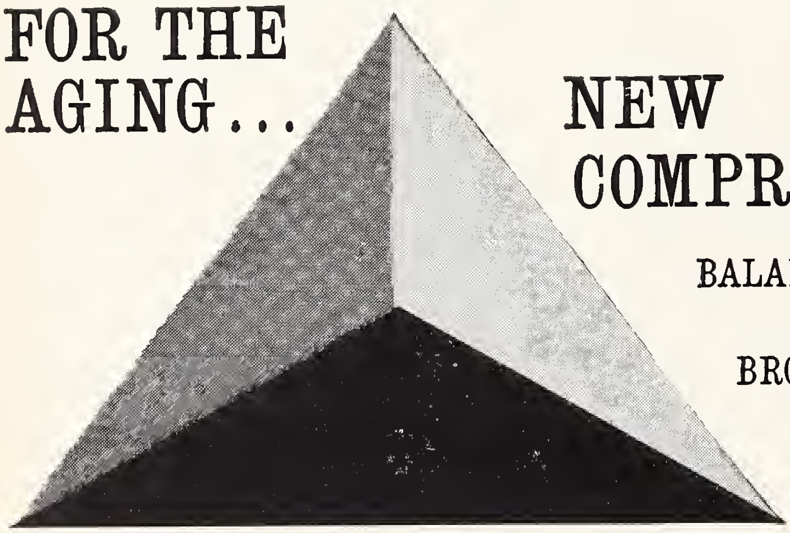
Dr. Howard F. Polley, Mayo Clinic, was a featured panelist in the first of a new "therapeutic" panel series of the **Medical Tribune,** a tabloid journal devoted to findings and research in the medical field.

* * *

Dr. C. W. Mayo, Rochester, has received many letters from readers of the recent **Saturday Evening Post** series on the Mayo Clinic and Mayo Foundation. According to reports, comments on the articles were "warm and congratulatory." Dr. Mayo received many letters from old friends and patients, as well as notes from very ill persons or relatives of the very sick. One letter recommended a whole new category of doctor, one whose job it would be to prevent persons from getting sick, rather than curing.

* * *

Dr. John W. Stuhr, dean of Stillwater physicians, cut the ribbon that opened the Elm Nursing Home recently in Stillwater.



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Dr. Markham J. Anderson, a member of the staff of the Mayo Clinic for thirty-one years, retired from the active practice of medicine on the first of the year. Dr. Anderson was a native of Rochester and received his medical degree from the University of Minnesota Medical School in 1925.

* * *

The new president of the Immanuel Hospital Medical Staff (Mankato) is **Dr. A. M. Scheidel** of Mankato. Other officers elected are **Dr. D. C. Meredith**, Mankato, vice president; and **Dr. W. E. Mathews**, Mankato, secretary. These officers and two elected members, **Dr. P. H. Gislason** and **Dr. J. C. Mickelson**, Mankato, comprise the Executive Committee for 1961.

* * *

Residents of Vesta, Minnesota, and the surrounding area recently gave honor to Vesta's only physician **Dr. Roy A. Peterson**, for fifty years of medical service to the area. The people turned out en masse to make the event a huge success. Dr. Peterson was presented with a gold plate, suitably engraved with an expression of the sentiments of the people of the community. Following a banquet, a reception, open to the public, was held with approximately five hundred people attending to express their congratulations and thanks to Dr. Peterson. Dr. Peterson is the father of **Dr. Kenneth Peterson** of Marshall, Minnesota.

Gareth Hiebert, the Oliver Towne columnist for the ST. PAUL DISPATCH, recently wrote a feature article about **Dr. Lillian Nye**, St. Paul. The event was celebrating Dr. Nye's anniversary of fifty years as a physician. The article told the story of Dr. Nye from the time she decided to become a doctor up to the present day. It also noted that she has been resident physician at Bryn Afon, an exclusive camp for girls near Rhinelander, Wisconsin, for thirty-three years.

* * *

Dr. S. W. Giere, Benson, has limited his practice of medicine to half days only. Dr. Giere has been in Benson since 1921.

* * *

The new Chief of Staff at St. Francis Hospital in Shakopee is **Dr. Harry Simmonds** of Prior Lake.

* * *

Dr. Robert Nolan, St. Louis Park, has been elected Chief of Staff of the Glenwood Hills Hospital. Other officers are **Dr. Richard S. Williams**, Golden Valley, assistant chief and **Dr. James P. Garvey**, Golden Valley, secretary-treasurer.

* * *

In conjunction with the announcement of Dr. Giere, Benson, of limitation of practice, **Dr. Robert Nelson** and **Dr. William K. Skaife**, both of Benson, announced that they will be associated in the practice of medicine. Dr. Skaife was formerly in a partnership with Dr. Giere and Dr. Nelson was associated with Dr. Donald Holm, who left last fall to take advanced study at the University of Minnesota.

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Contents f

SCIENTIFIC ARTICLES

ORIGINAL CONTRIBUTIONS

Diagnosis and Treatment of Arterial Injuries
Lloyd D. MacLean, M.D., Robert S. Flom, M.D., Donald H. Peterson, M.D., St. Paul, Minnesota 133

Abdominal Penetrating Wounds
Claire J. Strobel, M.D., Claude R. Hitchcock, M.D., Ph.D., Minneapolis, Minnesota 143

The Significance of Atrial Fibrillation and Arterial Emboli in Surgery of the Mitral Valve
Rodman E. Taber, M.D., Conrad R. Lam, M.D., Detroit, Michigan 148

Emotional Stress in the Etiology of Coronary Heart Disease
Henry I. Russek, M.D., Staten Island, New York 155

Congenital Arteriovenous Fistulas of the Extremities
John P. Delaney, M. D., Minneapolis, Minnesota 160

ABSTRACTS AND BRIEFS 167

Minnesota Medicine Represents

Duluth Surgical Society
Minneapolis Academy of Medicine
Minneapolis Obstet. and Gynecol. Soc.
Minneapolis Surgical Society
Minnesota Academy of Medicine
Minn. Acad. of Occup. Med. and Surg.
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Minnesota Academy of Ophthalmology and Oto-Laryngology
Minn. Society of Clinical Pathology

Medicine

ril, 1961

Volume 44
Number 4

MISCELLANEOUS ARTICLES

PRESIDENT'S LETTER 168

EDITORIALS

The Bio-Medical Library
Vera M. Clauson, Minneapolis, Minnesota 170

Emotional Factors in Coronary Occlusion
Barney M. Dlin, M.D., Philadelphia, Pennsylvania 171

Eat and Run
Ancel Keys, Ph.D., Minneapolis, Minnesota 173

The Importance of Art in the Art of Living
Birney Quick, Minneapolis, Minnesota 173

MEDICAL ECONOMICS
Minnesota Survey Shows Aged Can Pay Medical Bills 175

THE ART OF MEDICINE 179

MINNESOTA BLUE SHIELD A-49

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS A-50

IN MEMORIAM A-53

WOMAN'S AUXILIARY A-55

MEETINGS AND ANNOUNCEMENTS A-56

THE PHYSICIAN'S DIARY A-59

CLASSIFIED ADVERTISING A-66

INDEX TO ADVERTISERS A-67

Minn. Society of Internal Medicine
Minn. Society of Neurol. & Psych.
Minn. State Med. Association
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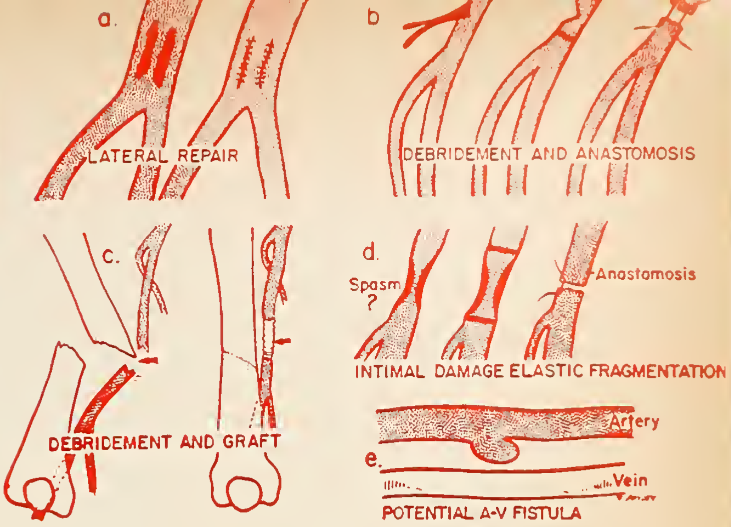
Figure 1. Types of arterial injury seen in civilian practice with suggested repair for each are illustrated. See text for discussion.



Diagnosis and Treatment of ARTERIAL INJURIES

LLOYD D. MacLEAN, M.D.**
ROBERT S. FLOM, M.D.
DONALD H. PETERSON, M.D.
St. Paul, Minnesota

THE CONCEPT established during the Korean War of restoring normal blood flow following arterial injury represents an outstanding advance in the surgery of trauma. When ligation was practiced[1,2], the amputation rate was 50%. With arterial repair or replacement, this rate has been lowered to 15% and the salvaged limb is much more likely to be functional. It is the purpose of this report to classify the types of arterial injuries seen in civilian practice, to summarize the diagnostic features of each, to emphasize the importance of arteriography in the diagnosis of such injuries and to illustrate with case reports some results of treatment.

Classification of Arterial Injury and Repair

The types of injury encountered and the ideal repair for each are illustrated in Figure 1. In the aorta or iliac vessels pictured in (a), where the lumen size will not be compromised by debridement and repair, lateral repair is best utilized. In (b) a partial laceration of the common femoral artery is illustrated. Treatment of a laceration in an artery of this size or smaller is best treated, in the opinion of the authors, by resection of the involved area and end-to-end anastomosis. In (c) there is an absolute loss of continuity of the vessel with damage of the vessel which negates an end-to-end anastomosis

---

* From Ancker Hospital, St. Paul 1, Minn., and Department of Surgery, University of Minnesota. Supported by a grant from the Minnesota Heart Association. Presented at the October 1960 meeting of the St. Paul Surgical Society.
** Markle Scholar in Medical Sciences.

following debridement; a graft must be inserted. In (d) there is pictured a narrowed segment of artery of the type which has frequently been called "spasm." At operation for debridement of a wound or for fixation of a fracture, the pulse distal to this area of "spasm" is absent or greatly diminished. A more probable diagnosis in this situation is arterial contusion with subintimal hemorrhage. Frequently, thrombosis follows an episode of "spasm" which leads to complete occlusion of the vessel and peripheral ischemia. If, at the time of operation, measures which are taken to relieve arterial spasm (such as Papaverine solution (2.5%) applied locally) do not restore a normal pulse distal to the area in question, resection and anastomosis should be performed. In (e) a traumatic aneurysm is illustrated. This lesion may rupture through all of the layers of the arterial wall and form a pulsating hematoma (false aneurysm) or may rupture into an adjacent vein and form an arteriovenous fistula. The treatment in either case is to restore normal blood flow either by resection and anastomosis or graft, or by lateral repair if the artery is of the size of the innominate, iliac, or larger.

Diagnosis

The diagnosis of arterial injuries is usually not difficult. Serious arterial injuries may and have been overlooked, however, for relatively long periods of time. Since early operation is required for successful treatment, diagnosis must be prompt. In addition to the examination of the site of injury, careful inspection and palpation of the distal extremity frequently leads to the proper diagnosis. The findings of 1) color and temperature differences between the injured and normal limbs, 2) absent peripheral pulses on the affected side, 3) sensory changes (numbness, hypalgesia, analgesia, and pain), and 4) on oscillometry an absence of pulsation on the injured side suggest major arterial injury. All of these classical findings, however, may be absent in the presence of severe arterial injury, e.g. traumatic aneursym. The absence of pulses in the normal extremity due to arteriosclerotic changes may confuse the diagnosis. Differences in color and temperature of limbs which have been exposed to cold following an auto accident may be of no value in making a diagnosis of arterial injury. Subjective findings of numbness and pain are likewise of little value in establishing a diagnosis of arterial injury in a patient with a fractured bone in the limb under surveillance.

We have come to rely increasingly on arteriography in patients with suspected arterial injuries for the following reasons:

1) Diagnosis can be established with certainty without a dangerously long period of observation. In certain types of arterial injuries, such as traumatic aneursym, the final diagnosis is frequently dependent upon arteriography.
2) The precise location of arterial disruption can be determined. This may be located at a surprising distance from the fracture site when a fracture is the cause of the lesion.
3) The degree of collateral flow about an injured artery can be established.
4) It can be determined if a peripheral pulse in an injured extremity is due to collateral flow or to an uninjured main vessel.
5) Arteriography is one of the best methods to evaluate reparative surgery and the only way to be certain of what one has accomplished by therapy. Arteriography on the operating table after restorative surgery can clarify a doubtful result or may demonstrate a second unsuspected lesion at a more distal site in the vessel.

Arteriographic studies of the extremities in the adult can be accomplished by using standard roentgen equipment and with the hand injection of 20 ml. of 60% Renografin. Visualization of the aorta and its branches can be accomplished by passing a large #330 polyethylene catheter via the femoral artery to the desired position. Forty to 50 ml. of 90% Hypaque is then injected under high pressure through the catheter. A series of films are taken in two planes, using the Schonander biplane rapid film changer. Figure 2 is an example of this type of study with visualization of the aortic arch and the brachiocephalic vessels.

The following are a number of case reports illustrating each type of arterial injury, the treatment instituted and the results of the treatment.

Case 1.

Mr. R. J. — A. H. #235563, a 21 year old white male was admitted to Ancker Hospital on 2-12-59 having been wounded in the right thigh by a shotgun discharged at close range. The wound was complicated by the presence of shot and casing which had entered the right thigh when the shotgun shell, which the patient was carrying in his pocket, was discharged. There was a large wound of entrance on the lateral thigh but no wound of exit was evident. The roentgen examination of the injured extremity is illustrated in Figure 3. A cold blue extremity without sensation below the knee and without palpable pulses below the common femoral artery was found on physical examination. At operation the common femoral artery was isolated and hemorrhage was controlled. The wound and artery were debrided and repair was accomplished as is demonstrated in Figure 4. The fracture was treated in balanced traction. The femoral vein was disrupted and was ligated. An arteriogram performed five months after the injury is illustrated in Figure 5 and showed a patent

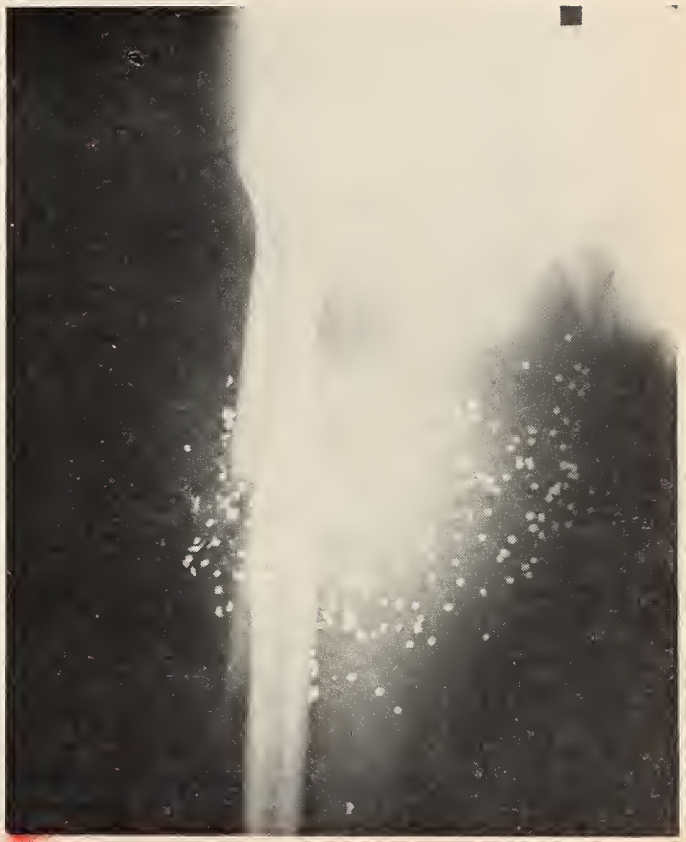


Figure 3. Case 1. Roentgen appearance of limb on day of injury (2-12-59) showing large quantity of shotgun pellets and casing from one shell in the thigh.

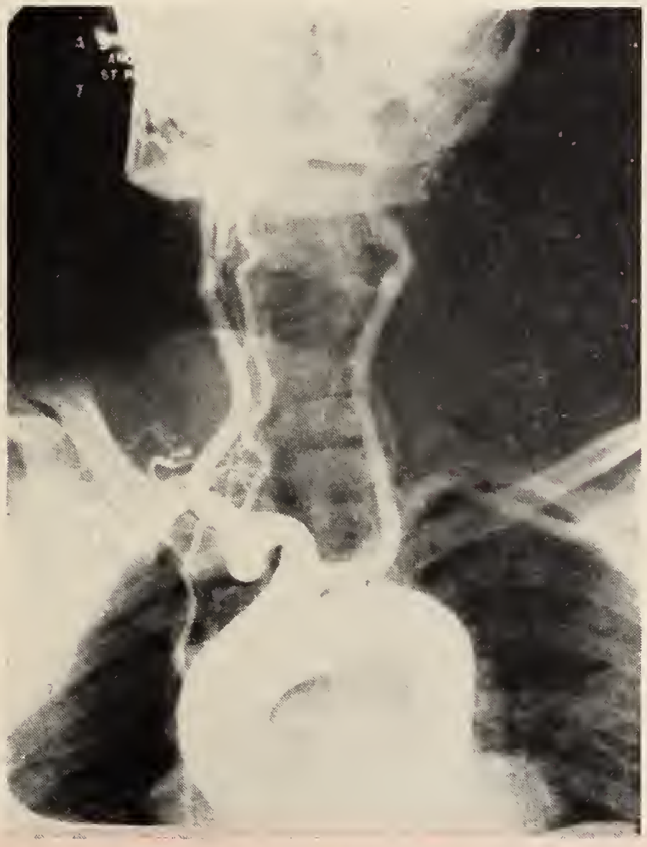


Figure 2. Roentgen appearance of contrast visualization of the aortic arch and brachiocephalic vessels. A tortuous innominate artery is present. Note the anomalous origin of the left carotid artery. There are only 2 major vessels from the aortic arch in this patient rather than 3. This vascular arrangement is seen normally in the canine species.

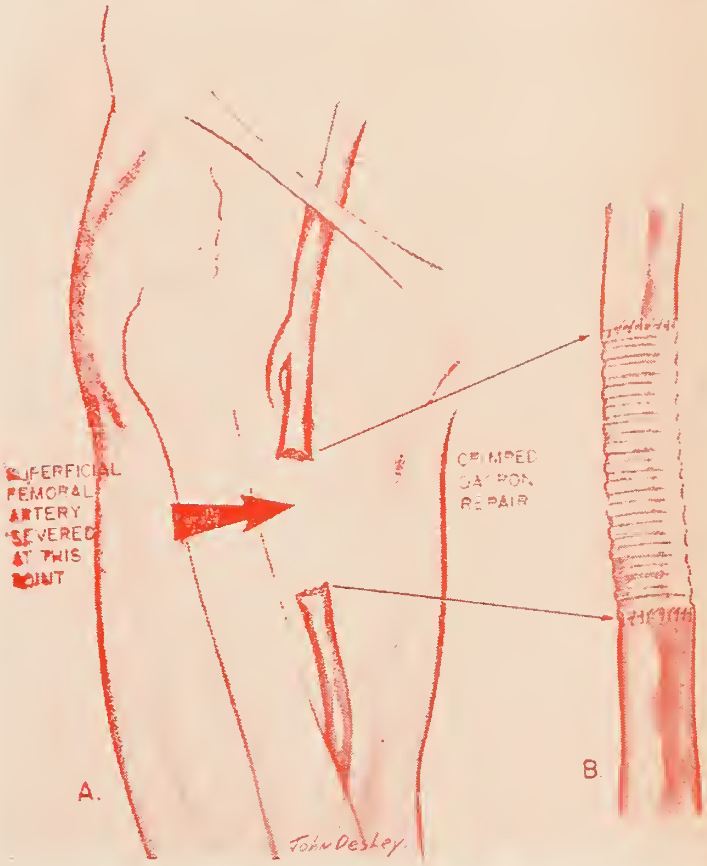


Figure 4. Case 1. Illustration of defect in superficial femoral artery with repair using knitted Dacron prosthesis.

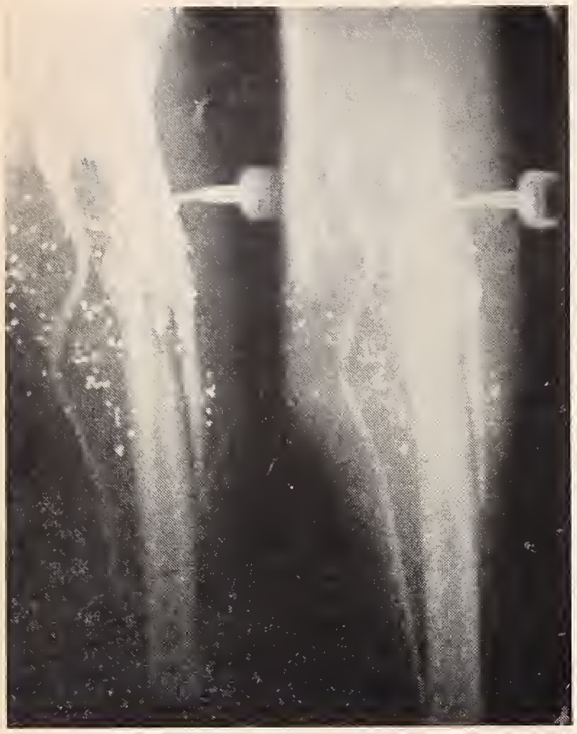


Figure 5. Case 1. Arteriogram performed 5 months following injury showing a patent graft.

femoral artery. The patient has pedal pulses and has returned to full activity at the present time.

Comment: This patient illustrates the type of injury for which a graft is necessary to bridge a defect in an artery. Crimped knitted Dacron 10 mm. in diameter was used in preference to woven Teflon for this smaller vessel. A vein graft may be preferable to knitted Dacron; however, we are unable to conclude this with any degree of certainty at the present time.

R. N. — A. H. #193989, a 12 year old boy was admitted to Ancker Hospital on 12-26-56, after being shot with a .22 calibre missile in the left cervical region. The bullet entered the left side of the neck in the mid-portion of the anterior border of the sterno-cleidomastoid muscle and descended into the posterior mediastinal space. A marked increase in the circumference of the neck was present and was associated with dysphagia and dyspnea two or three hours after admission. At operation, it was found that the bullet had perforated the left common carotid artery. There was also bleeding from the left thyrocervical trunk. The injury which was encountered and the treatment which was performed are illustrated in Figure 6. The common carotid artery was debrided and an end-to-end anastomosis was done. The thyrocervical trunk was ligated. The patient made an uneventful recovery and had normal carotid and superficial temporal pulses on the side of the injury. An angiogram has not been performed postoperatively to demonstrate the patency of the anastomosis.

Comment: This patient illustrates the type of arterial injury which is best treated by end-to-end anastomosis. Care must be taken to debride adequately the injured vessel and to perform the anastomosis with a minimum of tension on the vessel. If these requirements can be met, the results are superior to those obtained in which a graft is used.

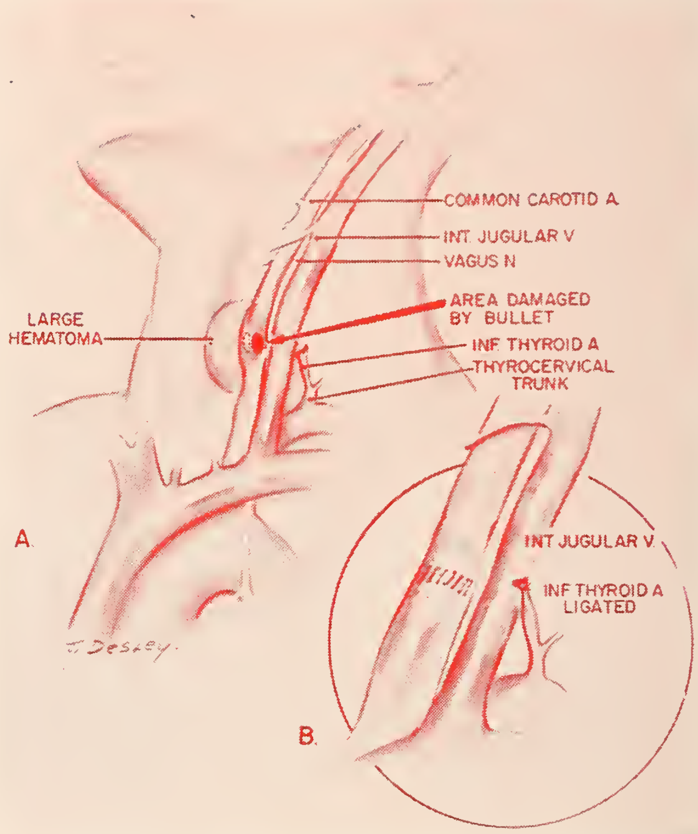


Figure 6. Case 2. Illustration of perforated left common carotid artery. Resection of damaged area with end-to-end anastomosis is the treatment of choice.

Case 3.

Mr. R. L. — A. H. #71984, a 32 year old white male was admitted to Ancker Hospital on 9-20-58 a few minutes after being shot in the abdomen with a .22 calibre bullet. The patient was in profound shock and was taken immediately to the operating room. At surgery, a moderate amount of blood in the peritoneal cavity and an enormous retroperitoneal hematoma were found. The bullet had traversed the stomach and divided a branch of the superior mesenteric artery at the base of the small bowel mesentery. Major bleeding, however, came from a rent in the abdominal aorta located just above its bifurcation as is illustrated in the Figure 7. Bleeding was controlled by cross clamping the aorta above and below the aortic wounds and lateral repair was accomplished. With the exception of a wound infection, this patient made an uneventful recovery.

Comment: Lateral repair is the method of choice for repairing injuries of the aorta. The wide lumen of the aorta permits debridement and successful repair of injuries in this location. Lateral repair can be accomplished quickly. This is especially important for aortic injuries in the thorax or in the abdomen above the renal vessels because of the limited time one can cross clamp the aorta in emergency situations.

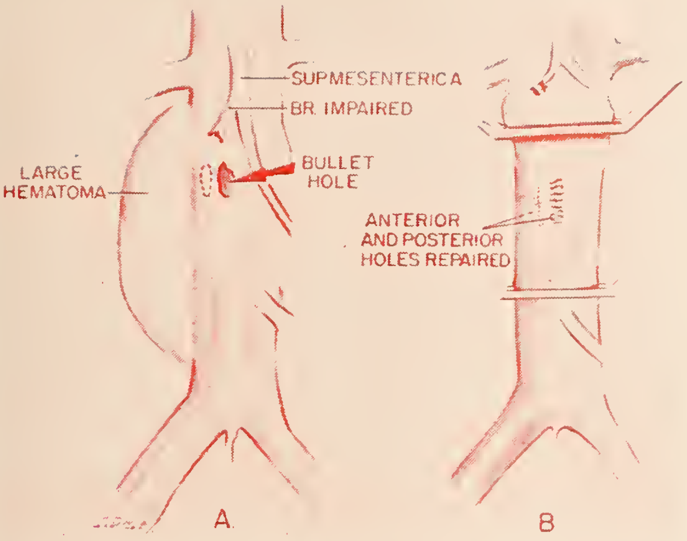


Figure 7. Case 3. Illustration of through and through perforation of aorta treated successfully by debridement and lateral closure.

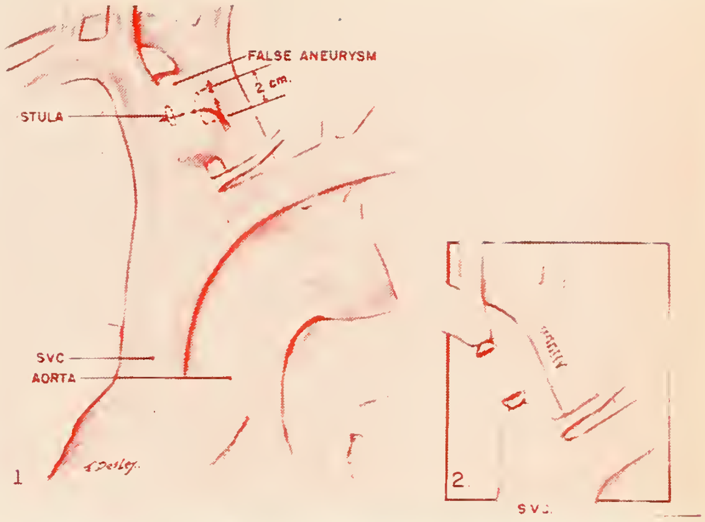


Figure 8. Case 4. The false aneurysm and fistula as visualized at operation. The right innominate vein was closely adherent to the false aneurysm and both were resected. The innominate artery was controlled cephalad to the left innominate vein. The completed repair which was accomplished with 9 minutes of innominate occlusion appears at right.

Case 4.*

Mr. F. T. — A. H. #72589. a 26 year old was admitted to Ancker Hospital on 4-17-59, 30 minutes after sustaining a .32 calibre bullet wound in the left neck. Roentgen examination indicated that the passage of the bullet was across the superior mediastinum from the left neck into the right axilla posteriorly. A right pneumothorax with a fracture of the right third rib posteriorly was present on admission. A tube thoracostomy was performed following which the lung re-expanded. On the ninth post-injury day, a thrill and continuous murmur were detected with maximum intensity over the right clavicular-sternal junction. This was accompanied by an increase in pulse rate to 120, dyspnea and an exercise intolerance. A clinical diagnosis of arteriovenous fistula was made and was confirmed by a cardiac catheterization (Table 1) and by an increase in venous pressure in the right arm and increase circulation time (arm to tongue) when performed from the right arm (Table 2). The maximal elevation of oxygen saturation and pressure occurred in the right innominate vein suggesting a communication between the innominate artery and the right innominate vein. This was found at surgery together with a false aneursym. The false aneursym and right innominate vein were resected and the innominate artery repaired as is illustrated in Figure 8. This patient made an uneventful recovery.

Comment: This arterial injury progressed from a false aneurysm to an arteriovenous fistula. It represents the 8th reported case involving innominate vessels. Cardiac failure is a common sequel to such injuries and was present in five of the seven previously reported cases.[3] Venous catheterization with serial measures of pressure and oxygen saturation of the blood proximal and distal to the point of the suspected fistula is a convenient method available for precisely localizing a fistula in this area. This patient was given prophylactic penicillin during the interval between the onset of the fistula and the operative repair. This was given to avoid subacute bacterial endocarditis which was reported as early as 1935 as a complication of arteriovenous fistula.[4] The repair of the innominate artery and the treatment of arteriovenous fistula is extremely important as ligation of this artery carries with it a rather high mortality. Gordon-Taylor[5] reported a mortality rate of approxi-

TABLE 1.

DATA OBTAINED FROM VENO-CARDIAC CATHETERIZATION

	Pressure mean mm Hg.	O^2 Saturation
Brachial Vein	....	67 %
Subclavian Vein	16	74.0%
Right Innominate Vein	24	92.9%
Left Innominate Vein	6	63.2%
Superior Vena Cava	5	83.4%
Main Pulmonary Artery	20	63.2%
Femoral Artery	....	93.4%

Cardiac Output = 10.31 l/min.
Cardiac Index = 5.34

TABLE 2.

VENOUS PRESSURES AND CIRCULATION TIMES PRIOR TO SURGERY

Date	Arm	Venous Pressure cm.	Circulation Time (Arm to tongue) in sec.
4-27-59	Left	12.4	14
	Right	20.0	19
5-4-59	Left	10.0	12
	Right	21.0	20

---

*Previously reported in detail by L. D. MacLean and W. F. Mazzitello.[3]

mately 50% of 133 cases of innominate or subclavian aneurysms in which the innominate artery was ligated. Sacrifice of the right innominate vein in this patient has caused no apparent difficulty. The venous pressure is identical and normal in both arms.

Case 5.

M. D. — A. H. #29786, a 44 year old white female was admitted to Ancker Hospital on 5-22-59 having been shot in both legs with .44 calibre missiles. There were 4 wounds about the right knee and 2 wounds, one of entrance and one of exit, in the proximal portion of the left lower leg. On examination, popliteal, posterior tibial and dorsalis pedis pulses on the right side were absent. Pulses on the left were normal. At operation, division of the right popliteal artery and vein was discovered. Following debridement, it was possible to make an end-to-end anastomosis; however, this was done with the vessels under some tension even with the limb in flexion at the knee joint (Figure 9). Later, following the removal of a plaster dressing, pulses were not palpable below the common femoral on the side of the arterial repair. This patient now has a viable limb but in all likelihood the arterial repair has failed. Further investigation of this patient has not been pursued because the patient developed a hypernephroma with metastases.

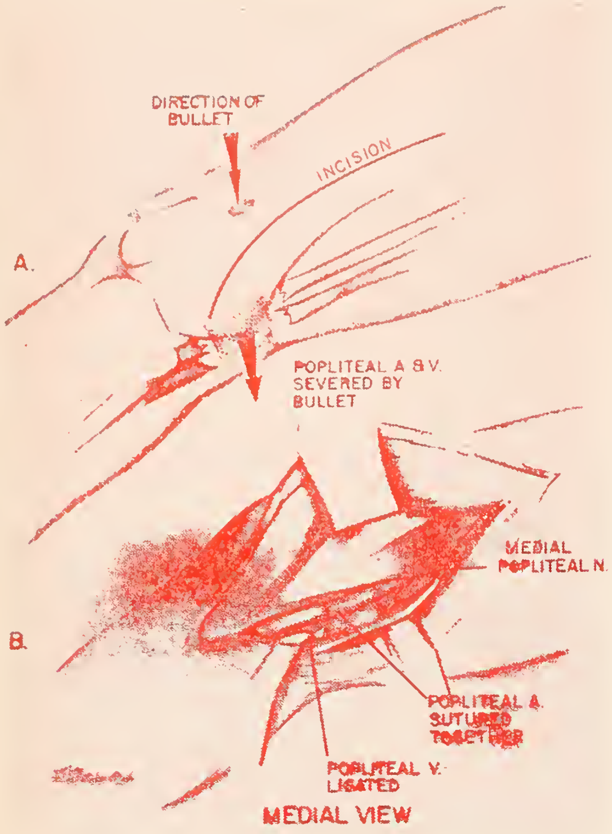


Figure 9. Case 5. Illustration of popliteal artery and vein repaired by debridement and end-to-end anastomosis.

Comment: The popliteal is a critical artery as evidenced by the high amputation rate asso-

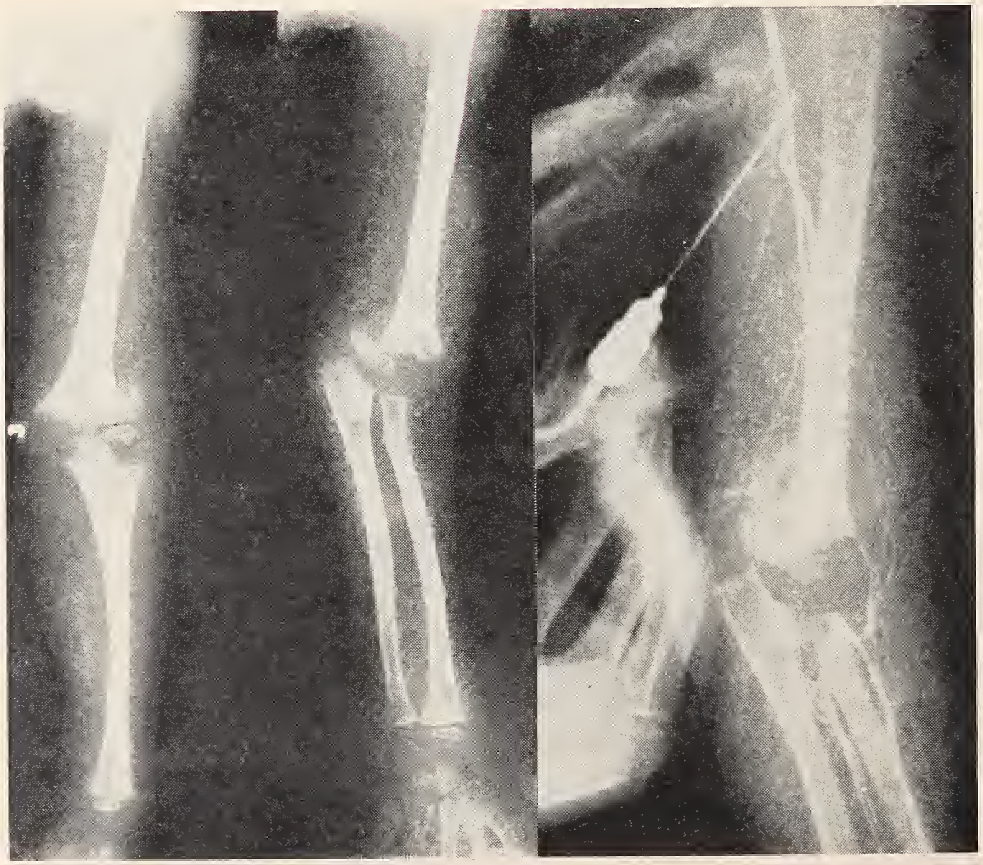


Figure 10. Case 6. (a) Supracondylar fracture of humerus with absent pulses at the wrist after the limb was placed in traction. (b) Angiogram reveals a block in the brachial artery but the presence of excellent collateral blood supply. Fasciotomy was not required and no vascular insufficiency supervened.

ciated with injury to this vessel. During the earlier phases of the Korean War, the incidence of gangrene when this vessel was ligated was 72.7%. Later in the Korean War, when the popliteal artery was being repaired, the amputation rate was still 32.4%.[2]

Case 6.

R. P. — A. H. #207652, a 4 year old boy was admitted to Ancker Hospital on 6-19-60 with a supracondylar fracture of the left humerus as shown in Figure 10a. A radial pulse was not palpable and did not return after the arm was placed in traction. An angiogram was performed (Figure 10b) which revealed a block in the brachial artery immediately proximal to its bifulcation into the radial and ulnar arteries. The angiogram revealed also an extensive collateral circulation with excellent blood flow below the site of occlusion with visualization of the radial and ulnar arteries of the wrist. This patient has had no vascular insufficiency of the limb and no operation was performed.

Case 7.

Mr. M. M. — A. H. #191439, 21 years of age was admitted to Ancker Hospital on 4-29-60 following an auto accident. Injuries include a compound fracture of the right humerus with a cold pulseless limb distal to the site of injury. At operation, the wound was debrided. There was a transection of the biceps and triceps muscle, "spasm" of the brachial artery and no apparent nerve injury. The fracture was internally fixed with a Rush intramedullary nail (Figure 11). The area of "spasm" in the artery beyond which no pulsation existed was treated with periarterial injections of Zylocaine 1.0% and intraluminal injections of Papaverine. The pulse beyond the area of "spasm" was not restored and no improvement in the color or temperature of the limb was noted. A right stellate ganglion block was also performed which was of questionable value. The following day, the stellate ganglion block was repeated. On 5-2-60 (4 days after injury) the right arm was amputated at the site of fracture because of ischemic necrosis of the extremity.

Comment: One cannot depend upon collateral blood flow to establish circulation in the injured upper extremity. This case illustrates the futility of periarterial and intra-arterial injected medication and sympathetic block for a serious arterial injury. The so-called arterial "spasm" occurring after injury is frequently subintimal hemorrhage with occlusion and this demands resection and anastomosis. Pathological examination of the injured vessel in this case showed hemorrhage within the vessel wall with occlusion and secondary thrombosis.

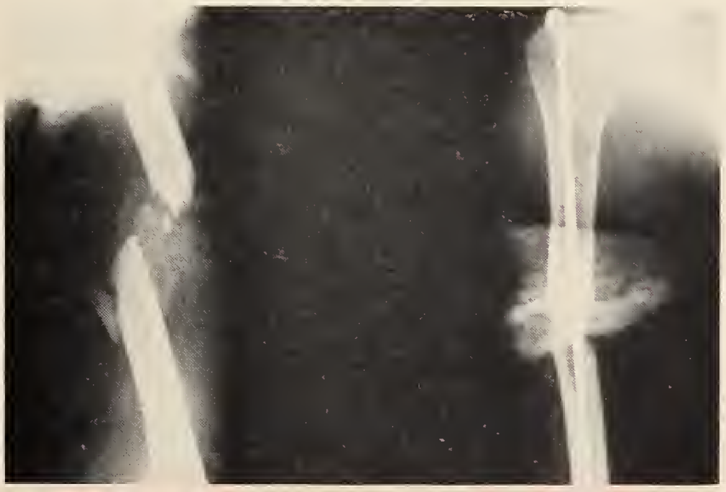


Figure 11. Case 7. Fracture of humerus with absent pulses at wrist treated by internal fixation.

Comment: Volkmann's inchemic contracture is a well known complication of this type of fracture. The decision of whether or not to perform fasciotomy is frequently difficult to make and is often delayed so that permanent damage and subsequent wasting of the arm results. It is suggested that an angiogram be performed when the pulses are absent beyond the site of injury. Fasciotomy should be performed when collateral vessels are not present as their absence would indicate increased pressure in the subfascial plane preventing collateral flow. When collateral flow is abundant, as in this case, one does not need to perform fasciotomy and can be confident of an adequate blood supply to the limb. At the present time, anastomosis of vessels of this size cannot readily be accomplished. This case illustrates the value of angiography in determining collateral flow.

Case 8.

Mr. B. C. — A. H. #242859, thirty year old male was admitted to Ancker Hospital on 1-1-60 following an auto accident. He complained of anterior chest pain, and widening of the superior mediastinum was noted on the posteroanterior chest roentgenogram. On 3-21-60, the patient was readmitted to the hospital for investigation of a persistent mass which was seen in the superior mediastinum on the

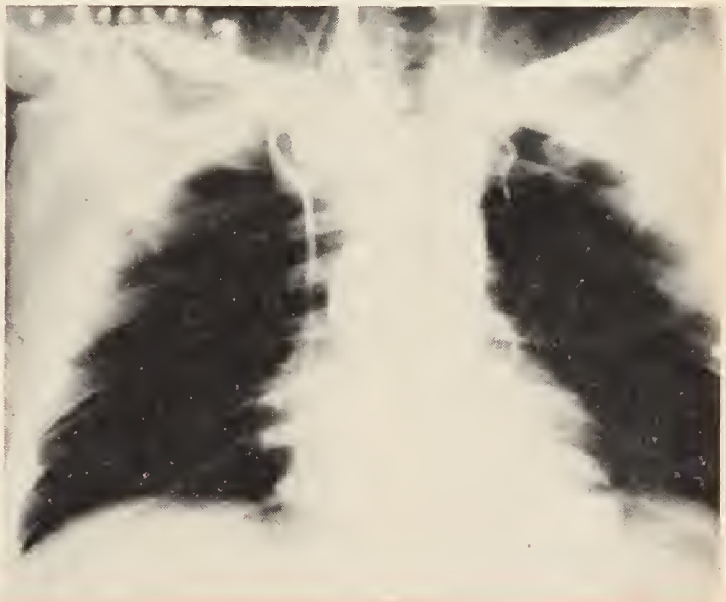


Figure 12. Case 8. The true nature of the mediastinal mass is revealed by the angiogram. There is a traumatic aneurysm of the right subclavian artery immediately beyond the innominate. Note filling of the carotid, vertebral and internal mammary vessels.

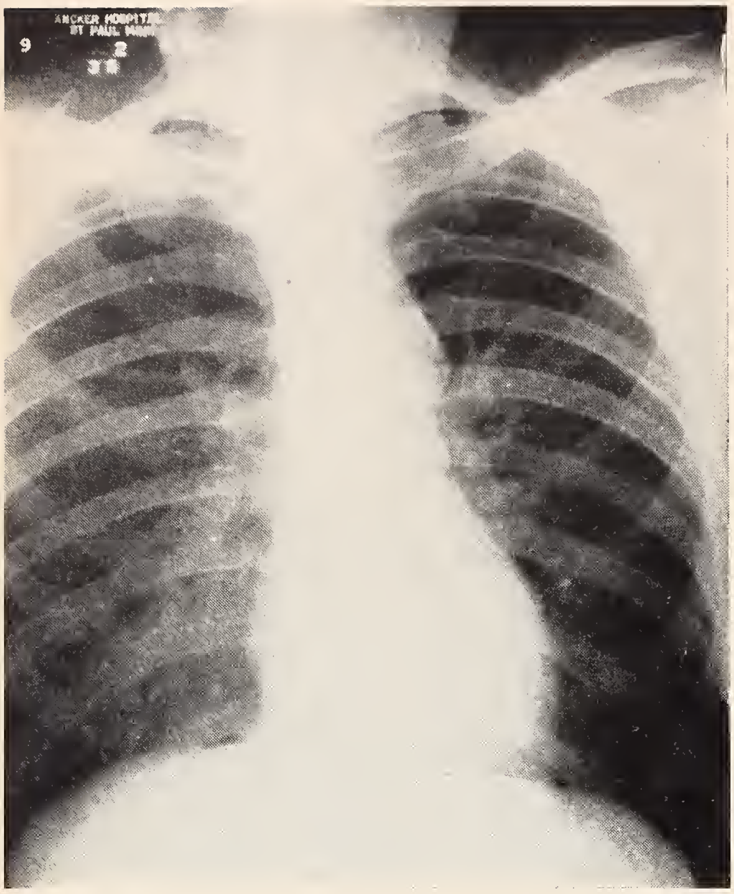


Figure 13. Case 9. Chest roentgenogram revealing calcified mass in left mediastinum that proved to be an aortic aneurysm on angiograms.

right side. A retrograde aortogram, which was performed on 3-2-60 (Figure 12) demonstrated an aneurysm of the right subclavian artery, which was located immediately distal to the bifurcation of the innominate artery. This patient underwent resection of the aneurysm, with a synthetic graft replacement on 4-29-60.

Comment: The value of angiography in the diagnosis of traumatic aneurysm is again illustrated by this patient. The history and chest film should arouse suspicion; however, the precise anatomical location, which is of considerable surgical importance, is best determined before surgery with arteriography.

Case 9.

M. S. — A. H. #248354, a 28 year old male was admitted to Ancker Hospital on 8-29-60 for retrograde aortogram and resection of a thoracic aortic aneurysm. Widening of the aortic arch with calcification had been discovered on a chest film made five weeks prior to his admission (Figure 13). The patient was asymptomatic and a review of earlier chest films made in 1954 and 1956 did not disclose this abnormality. In 1955, the patient was hospitalized for a period of nine days following an auto accident. At this time, he sustained a chest injury and this was associated with hemoptysis. Serological tests for syphilis were negative. A retrograde aortogram on 8-31-60 confirmed the diagnosis of a thoracic aortic aneurysm in the region of the ligamentum arteriosum. On 9-7-60 a resection of the aneurysm with Teflon replacement was performed. A partial bypass of blood from the left atrium to the left femoral artery was used during the period of aortic occlusion (Figure 14). Blood pressure in the upper extremities and lower aorta were recorded simultaneously during the bypass. A flow from the left atrium to the femoral artery of 25 to 30 cc's per kgm of body weight was found best to keep the pressure proximal to the aortic clamp from being abnormally elevated and at the same time provide sufficient flow to the area below the site of the aortic occlusion. This patient has made an uneventful recovery and has returned to work.

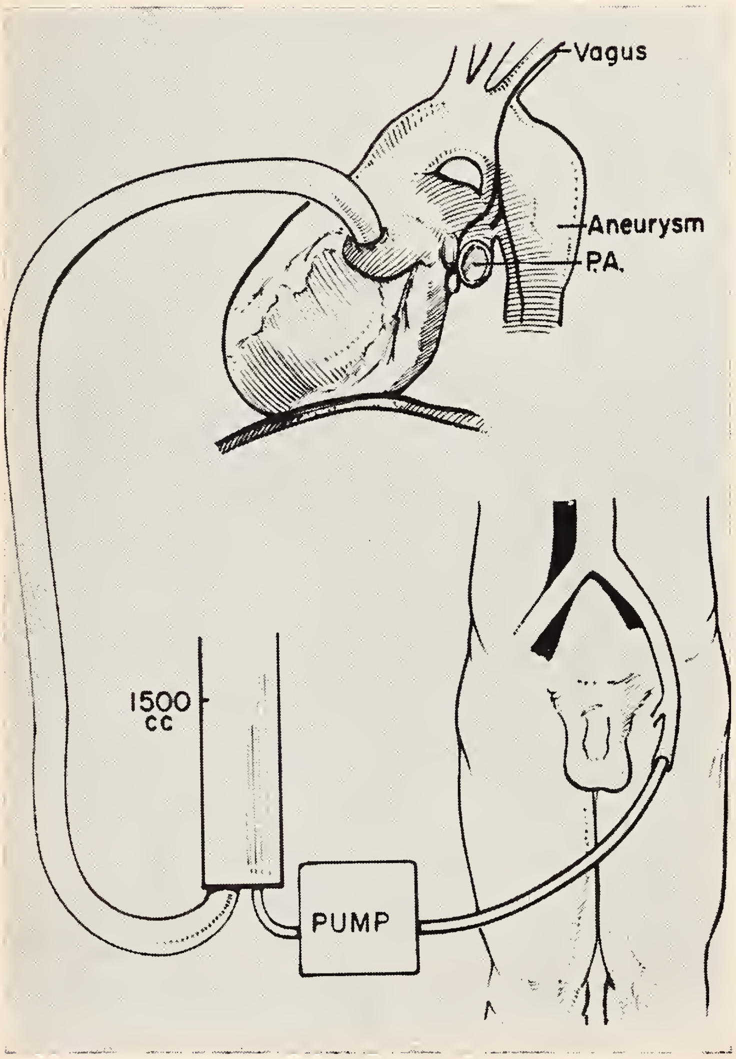


Figure 14. Case 9. Diagram of partial bypass used during cross clamping of aorta. A flow of 25 to 30 ml/Kg. of body weight per minute was adequate to prevent abnormal elevation of the pressure proximal to the aortic clamp and at the same time provide sufficient flow to the area below the site of aortic occlusion.

Comments: Traumatic aneurysms of the aorta occur with greater frequency at the site of the ligamentum arteriosum and this case serves to illustrate such an aneurysm. Utilizing partial bypass with a reservoir in the system, physiological pressures were maintained both above and below the site of aortic resection with an adequate flow of blood. The total time of aortic occlusion was 50 minutes.

Discussion

During World War II and the early phases of the Korean War, ligation of arterial injuries was generally practiced. After April, 1952, repair was used preferentially in the Korean casualties.[1,6] There was a remarkable decrease in the amputation rates coincident with arterial repair as is illustrated in Table 3. Also noted at this time was the superiority of veins as grafts over arterial homografts. In 34 patients treated with grafts of veins, only 4 patients (11.8%) required amputations. The results when arterial homografts were used were much poorer and in a series of 48 patients, 16 (33%) required amputation.[1]

The superiority of vein grafts over knitted Dacron has not been established for vessels of the size of the superficial femoral. The authors are of the opinion that a synthetic graft with greater porosity is preferable in arteries of this size and that knitted Dacron rather than a woven Teflon prosthesis is desirable (Case 1). Halpert and co-workers[7] have suggested that the ideal prosthesis will be synthetic. The fibers of this prosthesis will be interspersed with absorbable hemostatic fibers woven or knitted tightly enough to prevent blood loss at the time of the insertion, and yet provide sufficient porosity to allow later growth of fibroblasts and endothelial cells into the prosthesis. This would provide good hemostasis at surgery as well as a firm attachment of the prosthesis to the host tissues. The lining coagulum of fibrin, platelets, leukocytes and erythrocytes is not firmly attached to the woven Teflon grafts, whereas, it is more firmly attached to knitted Dacron prosthesis because of the fibroblastic growth into this more porous material. The lining coagulum of an impervious or closely woven graft may be detached by minimal trauma, and slip down as an inner lining of the graft thus causing occlusion of the vessel. This has been noted by Sako.[8] For this reason also, a Teflon graft is not recommended, especially if the graft must pass over a joint where a greater opportunity for trauma exists.

Lateral repair is a method utilized for lesser injuries and minimal lacerations requiring only one or two sutures. In a series of 35 arterial injuries treated by lateral repair,[1] there was only one amputation. Greater injuries, however, to an artery smaller than the aorta or iliac vessels are better treated by debridement and end-to-end anastomosis or graft. All vessels which are equal or greater in size than the popliteal artery in the lower limb should be restored. The repair of even smaller arteries, such as those found in the forearm and lower leg, may be critical if extensive injury exists. Shaw[9] has reported successful repair of the radial and ulnar arteries. Newer techniques for anastomosing smaller ves-

TABLE 3.

MANAGEMENT OF ARTERIAL INJURIES[1,6]
AMPUTATION RATE

Artery	W. W. II		Korea (Ligation)		Korea (Repair)	
	No.	% Amp.	No.	% Amp.	No.	% Amp.
Common Femoral	106	81	3	67	9	0
Superficial Femoral	177	55	4	75	12	8
Popliteal	502	73	6	100	17	18
Brachial						
Above Profunda	97	56				
Below Profunda	209	26				
Axillary	74	43	4	25		

sels appear promising and may be a solution to this problem.[10,11]

Arterial hemorrhage can usually be controlled with simple pressure over the bleeding site and a tourniquet need not be used. The danger of myoglobinuria and oliguria after the release of a tourniquet has been emphasized by Montagnani and Simeone.[12] This variant of the "crush snydrome" is hazardous and leads to death in a high percentage of patients within a week following injury.[13] Thompson and Campbell[14] were able to reduce the degree of myoglobinemia significantly by perfusing ischemic limbs in dogs with intra-arterial Dextran given prior to restoration of normal circulation. This technique might be used in patients with arterial injuries in whom the blood loss can be controlled only by tourniquet.

Attention to details and fastidious technique are most necessary in salvaging severely traumatized limbs. The edges of the arterial wound should be debrided before suture repair. Any fine atraumatic non-absorbable material can be used in the repair of the wound with a continuous over and over suture. Both ends of the artery should be flushed clear of all clots initially as well as just prior to placing the last few sutures. Palpable distal pulses should be present after repair. Local anti-coagulants were used in the patients reported. Systemic anticoagulation has not been utilized.

Summary

The current concept of treatment of acute arterial injury, designed to save both life and limb, is to restore normal blood flow. The diagnosis of acute arterial injury can usually be established by history and physical examination. Many serious arterial injuries are not always apparent from examination and may require further study before corrective measures can be instituted. The use of angiography may help establish the diagnosis and save valuable time in initiating definitive treatment. As initial treatment of arterial injuries is extremely important, all methods should be used in helping to establish the exact diagnosis, the anatomic site and the status of collateral circulation. We have attempted to classify the arterial injuries and their repair by illustration with case reports.

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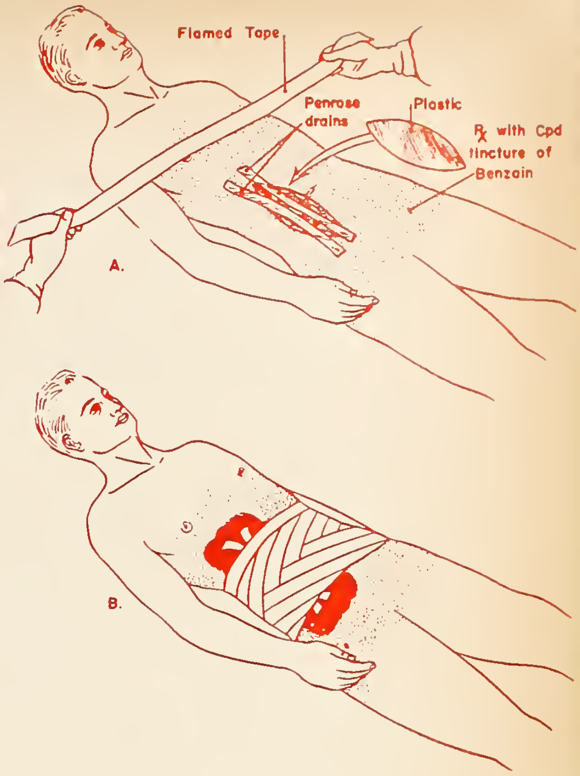

Figure 1. Method for preparing a septic abdomen for total peritoneal drainage; the patient is placed on his abdomen on a Stryker frame after application of the basket weave strapping.

ABDOMINAL PENETRATING WOUNDS

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IN THE CAPACITY of City Hospital the Minneapolis General Hospital cares for the major portion of acute abdominal and chest emergencies seen in the metropolitan area each year. This report is concerned with the penetrating wounds of the abdomen admitted during the five years from January 1, 1955 through December 31, 1959. Our concepts and methods of managing these cases will be emphasized. Not included in this report are the patients who were dead at the arrival of the ambulance on the scene of the tradgedy or those who expired en route to the hospital in the ambulance or other emergency vehicle.

Case Material

Forty penetrating wounds have been treated during this period. Twenty-two have been due to gunshot wounds and 18 were inflicted as stabbing injuries. The total experience is summarized in Table I. As might be expected, males predominate and, although age is not

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From the Surgical Service of the Minneapolis General Hospital.

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shown, the overwhelming majority were in the third, fourth and fifth decades of life. Seven patients died of their trauma. Of interest is a comparison of this mortality rate with the mortality in 38 penetrating wounds of the chest in a corresponding six year period; only one patient died of his penetrating chest wound.

The types of injury are listed in Table II. Shotgun injuries (fortunately less frequent) occur predominantly from accidents or suicide attempts, while most fights or brawls are waged with pistols or knives. The severity of shotgun injuries is emphasized by the high mortality in our series; four of six patients died of the shotgun blast. Three of the seven deaths were due to massive hemorrhage which resulted when major blood vessels were injured; inability to get two patients to the operating room quickly enough to stop internal bleeding (even with forced replacement) was responsible in two cases, and extensive laceration of all great vessels in the abdomen was responsible in the third case. The danger of peritonitis in shotgun wounds can readily be appreciated considering the massive contamination accompanying disruption of many organs including bowel with soilage of the abdominal cavity from fecal material. Table III gives the breakdown as to causes of death.

Review of the organs most frequently involved reveals the liver to head the list in both gunshot wounds and stabbings. As might be anticipated the small bowel and colon follow in that order but, of greater relative frequency in the gunshot wounds than in the stabbings. (See Tables IV and V) The frequency of vascular injury and renal system damage in the gunshot wound cases is noteworthy. Seven patients had major blood vessels traumatized, and 7 had direct kidney damage; 3 patients suffered ureteral injuries and 3 had bladder injuries. The smaller number of organs involved in the stabbing cases reflects the fact that, the anterior abdominal wall was traversed in several instances but the weapon did not penetrate deeply.

The analysis of complications and deaths presented in Table VI denotes the severity of the injuries. The 2 patients with shotgun injuries suffered multiple complications as did the 9 surviving pistol injury patients and 7 of

Table I

PENETRATING WOUNDS OF THE ABDOMEN
1955 - 1960

		Sex			
		Male	Female	Living	Expired
Gunshot	(22)	18	4	16	6 (27.2 %)
Stabbing	(18)	17	1	17	1 (5.5 %)
Total Cases	40				

Table II

TYPE OF INJURY

		Expired	
Pistol			
Accident	3	1	
Suicide	2	0	
Fight	11	1	
	16	2	(12.5 %)
Shotgun			
Accident	2	0	
Suicide	3	3	
Fight	1	1	
	6	4	(66.6 %)
Stabbing			
Accident	0	0	
Suicide	2	0	
Fight	16	1	
	18	1	(5.5 %)
Mortality % of Total — 17.5 %			

Table III

CAUSES OF DEATH

Massive Hemorrhage and Shock (within 12 hours of injury)		
Pistol	2	
Shotgun	1	
Stabbing	0	
	3	
Peritonitis		
Pistol	0	
Shotgun	2	
Stabbing	0	
	2	
Other		
Shotgun	1	— renal shutdown
Stabbing	1	— cardiac arrest secondary to anesthetic intubation
	2	

the stabbing victims. Four of the patients injured with shotgun blasts had massive upper gastrointestinal tract hemorrhage from stress ulcers.

Discussion of Surgical Management

By scanning the complications one readily finds clues to problems in management. In the two cases of urine peritonitis the lacerated ureter was not appreciated at the initial surgery. A satisfactory technique for defining a minimal ureteral leak is the intravenous injection of indigo carmine at the operating table and examination of the suspected segment of ureter for any appearance of dye several minutes later. With an indwelling Foley catheter excretion of the dye into the bladder can be verified and the absence of dye in the peritoneal cavity accepted as accurate evidence of a normally functioning ureter.

The number of abdominal infections (wound, peritonitis and abscess) totalled eight. In the

Table IV

ORGANS INVOLVED IN GUNSHOT WOUNDS

Liver	12	Spleen	4
Small Bowel	10	Bladder	3
Colon	10	Ureter	3
Rectum	1	Pancreas	2
Vascular Injuries	7	Gallbladder	1
Kidney	7	Adrenal	1
Diaphragm	5	Spinal Cord	1
Stomach	5		

Table V

ORGANS INVOLVED IN STAB WOUNDS

Liver	8
Small Bowel	2
Colon	1
Gallbladder	1

Table VI

ANALYSIS OF COMPLICATIONS AND DEATHS

Pistol	Shotgun	Stabbing
1. Died — hemorrhage	1. Gluteal abscess Abdominal wound infected Upper GI bleeding Pneumonitis Peritonitis	1. Died — anesthetic death
2. Ureteral fistula Wound infection Peritonitis Pneumonitis Infarct — cardiac	2. Died Peritonitis Pneumonitis Upper GI bleeding Aspiration	2. Pericardial tamponade Biliary drainage
3. Rt. subhepatic abscess Rt. pleural effusion	3. Died Peritonitis Upper GI bleeding Subhepatic abscess Aspiration	3. Pneumonitis
4. Urine peritonitis Ureteral stricture Mild hydronephrosis Abdominal wall abscess	4. Died Massive hemorrhage	4. Wound hematoma
5. Bleeding secondary to anticoagulation Rx	5. Died Renal shutdown Adrenal necrosis Pulmonary edema	5. Persistent bile drainage
6. Died Massive hemorrhage	6. Upper GI Bleeding Myocardial damage Lt. pleural effusion	6. Wound hematoma
7. Left leg numbness Paraplegia		7. Pneumonitis
8. Vesicle fistula Lt. ureteral stricture Lt. hydronephrosis Wound infection		8. Small skin slough
9. Wound infection		
10. Pneumonitis		

33 living patients there were four infections in the peritoneal cavity for an incidence of 12%. Two patients died as a result of peritonitis (5% of the entire group). Since all of the wounds were contaminated, by the nature of the trauma, this incidence of infection cannot be considered excessive. As a final step in the operative procedures in patients with extensive abdominal trauma it is our practice to irrigate the abdominal cavity with 5,000 to 10,000 cc. of sterile warmed saline solution. This thorough mechanical cleansing removes as much of the contaminated material as possible leaving relatively fresh peritoneum to heal.

As a final step before closing the abdomen a few of our patients have had buffered Terramycin solution introduced into the peritoneal cavity. In the early part of the period a penicillin streptomycin mixture was used. This use of antibiotics has been limited to those patients who have sustained massive contamination from bowel contents. Additionally, all patients have had tetanus toxoid or antitoxin given preoperatively and, in the case of shotgun injuries, gas gangrene antitoxin is administered. Postoperative therapy with systemically administered antibiotics is used only in those patients in whom severe fecal contamination is found at surgery.

Since the liver is most frequently damaged during this type of trauma the occurrence of two cases of persistent bile drainage is not surprising. In dealing with the injured liver we remove any obviously devitalized tissue and suture the lacerations with No. 1 chromic mattress, or simple sutures, occasionally over Gelfoam sponge. Only minor (i.e. small) liver lacerations are not drained. Large numbers of Penrose drains (6-12) are used to insure adequate drainage through separate large stab wounds in the flank.

One complication was found exclusively in the shotgun injuries and occurred in four patients, being the direct cause of death in two of the patients; this was upper gastrointestinal bleeding from a stress ulcer. In three of the patients generalized suppurative peritonitis was present. The ages of these patients were 17, 17, 31 and 41 years respectively. In one case surgical control of the bleeding was attempted and this patient subsequently expired following simple ligation of the bleeder. The two patients who did survive this serious complication were treated with hypothermia (total body cooling to 86° F. for 7-8 days) and vigorous blood replacement. Under conditions of extreme stress this complication should be anticipated and attempts made to avoid full blown hemorrhage. Continuous nasal gastric decompression of the upper gastrointestinal tract is mandatory during the periods of ileus, and judicious therapy with frequent small feedings of skim milk alternated with antacids is protective after return of bowel function. However, even with the most careful prophylaxis, ulceration to some degree with greater or lesser amounts of blood loss can be anticipated in 25 to 50% of these patients. We believe the use of Banthine or pro-Banthine is contraindicated in these patients since these drugs would abet and prolong the ileus so commonly seen with stress situations of this kind.

The management of colon injuries has been well documented from army experience during World War II and the Korean War. Twelve patients in our series had a perforation of the colon or rectum. In managing these cases, four transverse colostomies, one cecostomy, and one sigmoid colostomy were done (i.e. six decompressing or diverting procedures of the colon). In the other one-half of the cases, closure of the colon was performed as a primary anastomosis at the time of exploration. Analysis of these patients reveals no complications attributable to the closure of the large bowel. We believe that a colon injury in civilian practice with prompt surgical attention presents a different problem than war injuries with the usual delay before definitive therapy can be instituted. In the face of massive contamination and marked contusion of surrounding tissues, however, a colostomy is indicated. Lesions of the rectum below the peritoneal reflection can be well managed without closure of the rectal rent by diverting the fecal contents proximally. One of our patients, so managed, had a complete and uncomplicated recovery.

Managing a patient with overwhelming peritonitis and multiple abscesses taxes the most energetic surgeon. When faced with this problem in two of these cases, and in similar situations in non-traumatic cases, we have utilized a method

of total peritoneal drainage. The wound is opened widely after removal of previously placed sutures, and the following regimen instituted. The wound is dressed twice a day and cleansed with hydrogen peroxide thoroughly. A piece of Minnesota Mining drape is cut to fit the wound contour and placed over the exposed bowel. The skin, each time, is thoroughly cleansed with ether followed by a liberal application of tincture of benzoin. Gauze dressings are placed at the inferior portion of the wound and the entire abdomen taped with three inch flamed adhesive tape (to the edges of the wound). The patient is kept in the prone position on a Stryker frame 90% of the time and complete gravitational drainage of the abdominal cavity assured. By providing complete drainage in this fashion a severely toxic patient can frequently be brought through to a state of resumed bowel function in about one week's time. When returning bowel function is visualized the patient is put on oral intake and granulation tissue will heal over the bowel and retract the edges of the open wound to a narrow scar. This technique, as used in our hospital, is portrayed in Figure 1.

Summary

We have presented a clinical analysis of 40 patients with penetrating wounds of the abdomen treated at the Minneapolis General Hospital during a five year period. These patients were almost equally divided between gunshot injuries and stabbing injuries: 22 gunshot cases and 18 stabbing cases. The over-all mortality in the gunshot cases was 27.2%, and the shotgun injuries were the most serious in this category with a mortality of 66.6% in the patients arriving at the hospital alive. In contrast the mortality of 5.5% in the stabbing victims is refreshingly low.

The danger of acute upper gastrointestinal hemorrhage from stress ulcers of the stomach or duodenum has been emphasized. Careful management with upper gastrointestinal decompression and judicious, frequent oral feedings upon resumption of bowel activity can minimize this complication in many patients.

We have had success with total body hypothermia in treating patients wtih massive gastroduodenal hemorrhage where surgical intervention in an already badly traumatized and infected abdomen is contraindicated.

The total number of patients with infection in the peritoneal cavity was 8, and this represents an incidence of 20% of the total of 40 cases. Two of these patients died with sepsis as the major factor in their exitus.

Our general plan for providing total abdominal cavity gravitational drainage has been discussed in detail, and we believe this procedure has salvaged several otherwise hopeless cases.

Primary anastomosis of the colon following resection of the injured segment is successful in patients suffering from "peace time" injuries. Immediate surgical therapy, as outlined here, in contrast to delayed surgical intervention under war time conditions permits the direct management of the bowel problem in place of an exteriorization procedure.

MULTIPLE MYELOMA SURVIVAL RATE

Mean survival rate of patients with proven multiple myeloma has been determined, in a paper by Feinleib and MacMahon of Brooklyn, to be 3.5 months after first admission to the hospital. In a series of 238 cases, 16 percent survived longer than 18 months, 8 percent survived three years. Females tend to live longer than males, as do younger patients of both sexes. Median duration of symptoms prior to diagnosis was five months.

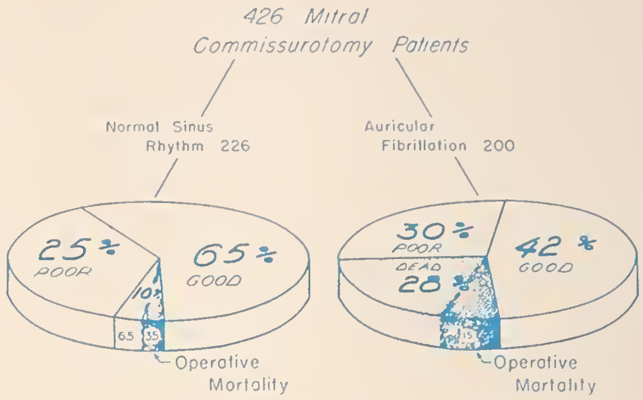

Fig. 1. The increased mortality, both operative and late, largely accounts for the fewer patients with auricular fibrillation who obtained a good result.

The Significance of Atrial Fibrillation

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THIS STUDY IS BASED on an analysis of the results attained in 426 patients who underwent closed mitral commissurotomy at the Henry Ford Hospital between March 1950 and January 1958. At the time of the survey the longest postoperative observation period was 8 years and the shortest 2 years. After determining the functional results of the survivors, the cases who had experienced arterial emboli were further studied to identify factors which were common to patients within this group. The analysis demonstrated that the patients could be divided into two significantly different groups from the standpoint of mortality and results, those with and those without atrial fibrillation.

CARDIAC RHYTHM AND RESULTS

Of the entire group of 426 patients, 79 (19 percent) had expired by the time of the survey, 27 or 9 percent due to operative mortality. Functional results were classified as good or poor, the former denoting significant improvement over the preoperative state and the latter indicating no improvement or deterioration. Without consideration of the cardiac rhythm, 227 (53 percent) of the 426 patients were classi-

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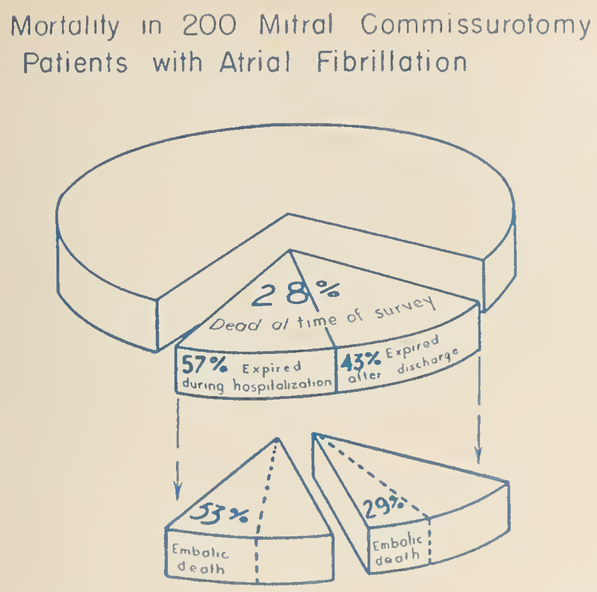

Fig. 2. Nearly one half of the deaths in this group of patients occurred after discharge from the hospital and approximately one third of these were embolic in origin.

And Arterial Emboli

in surgery of the mitral valve

fied as obtaining a good result while 120 (28 percent) were judged poor.

Two hundred (47 percent) of the 426 patients had developed atrial fibrillation by the time mitral commissurotomy was performed. Fifty four (28 percent) of these patients were dead at the time of survey, 83 (42 percent) were classified good and 61 (30 percent) as poor. When these results were compared to those observed in a nearly equal sized group of 226 patients with normal *sinus rhythm at the time of surgery, certain significant differences* are apparent. Of these 226 patients, 23 (10 percent) had expired by the time of the study, 147 (65 percent) obtained a good result and 56 (25 percent) a poor result.$^{\text{Fig. 1}}$ Since the number of poor results in both groups was similar, the reduction in the number classified as good from 65 percent in those with normal sinus rhythm to 42 percent in the atrial fibrillation group was largely accounted for by the higher mortality in the latter (10 percent as opposed to 28 percent). This higher mortality in patients with atrial fibrillation was found in both the operative (3.5 percent as compared to 15 percent) and late mortality figures (6.5 percent as compared to 13 percent). As will be subsequently demonstrated, this increased mortality in patients with atrial fibrillation is in large measure accounted for by deaths resulting from arterial embolization.

Cardiac Rhythm and Incidence of Embolization

Arterial embolization occured in only 2 patients with normal sinus rhythm, both expiring from operatively induced emboli. In one a calcific embolus presumably derived from a partially calcified valve lodged in the circumflex coronary artery, while the other fatality resulted from a cerebral embolus in the presence of heavily calcified mitral leaflets. A thrombus was not recognized in the atrium of either patient at the time of commissurotomy. Embolic disease is primarily an event associated with predominating stenosis. Twenty four (92 percent of the 26 postoperative deaths due to arterial embolization in this series of patients occured when stenosis was the most significant component of valve pathology.

Of the 200 patients with atrial fibrillation who had mitral commissurotomy, 70 (35 percent) experienced arterial emboli, either before or after surgery. Forty one (21 percent) of the 200 embolized at some time prior to operation, the time interval varying between 13 years and 2 weeks. This initial warning of impending danger in these 41 patients was followed by operative or postoperative embolization in 11 (27 percent). Twenty nine (14 percent) of the 200 patients with atrial fibrillation experienced arterial emboli after operation, 18 of them without a preoperative warning embolus. Table 1.

TABLE I. EMBOLIZATION EXPERIENCE IN 200 MITRAL COMMISSUROTOMY PATIENTS WITH ATRIAL FIBRILLATION

Embolization at sometime	(70)	35%
Preoperative embolization	(41)	21%
(11) 27% of these 41 patients embolized post-operatively		
Post-operative embolization	(29)	14%

Morbidity and Mortality from Embolization

Mitral stenosis of sufficient duration and severity to produce atrial fibrillation and left atrial thrombus formation has in our experience narrowed the valve to a finger tip size opening or smaller. This advanced degree of valve orifice contracture in the unoperated patient permits embolization of only realitively small clots as manifested by 43 preoperative cerebral embolic episodes among the 200 patients with fibrillation whereas embolization of larger thrombi such as those capable of producing aortic saddle emboli occured but twice prior to commissurotomy. Fifteen (35 percent) of the 43 patients experiencing preoperative cerebral emboli exhibited neurologic deficits ranging from hemiparesis to speech impairment by the time of mitral surgery. Further emphasizing the gravity of embolic disease in the unoperated mitral stenosis patient, Askey[1] found a 16 percent mortality in 308 patients at the time of the initial embolization.

Death due to arterial embolization occurred predominately at the time of surgery or in the first few days following commissurotomy but was recorded as long as 8 years later. Twenty four (43 percent) of the deaths among the 200 patients with atrial fibrillation were directly attributable to arterial embolization and accounted for much of the appreciably higher mortality in this group. The cerebral vessels were the most frequent site for postoperative emboli to lodge and a fatal result followed in 19 (56 percent) of the cases. Of the 56 (28 percent) deaths which had occured by the time of survey in the 200 patients with fibrillation, 32 (57 percent) occured during hospitalization for commissurotomy and 24 (43 percent) after discharge from the hospital. Seventeen (53 percent) of the deaths during hospitalization and 7 (29 percent) of those following discharge resulted from arterial embolization. Fig. 2.

Discussion

The motivation for conducting this survey is the hope that the surgical results attained with present day mitral valve surgery can be improved. Although the consensus as illustrated by statistics summarizing approximately 10,000 closed mitral commissurotomy cases[2] would place 70 to 75 percent of operated patients in the good result category, two important variable makes optimistic conclusions difficult. These are the variations in grading and classification and the factor of deteriorating results with the passage of time. An unknown portion of the latter may be due to true restenosis while other and perhaps more significant reasons are the limitations imposed upon the operation by severe rheumatic valve pathology and the experience of the operating surgeon. Regardless of the interpretation given this information, only 54 percent of the 37 surgeons contributing to the previously mentioned survey were satisfied with the operation as currently practiced. Kay[3] has recently advocated open surgery as primary surgical treatment for all mitral stenosis patients.

Since there would not seem to be justification at this time for discarding closed mitral surgery in favor of the open approach in all patients with mitral stenosis, an attempt has been made through this survey to define the type of patient whose mitral surgery is attended by the greatest mortality as well as the patient whose likelihood of enjoying a prolonged good result is the least. These selected patients then might logically be offered an open, direct attack on the mitral valve. The equivocal factors which attend the classification of patients into good or poor results have been avoided by using mortality statistics based on necropsy findings to evaluate long term results. Analysis of the survey herein reported demonstrates that both the early (hospital) and late (post discharge) fatality rates were significantly greater in a major group of patients, namely those with atrial fibrillation. After analyzing the causes of death, these differences were largely found to be accounted for by the morbidity and mortality of arterial embolization. Although it might be expected that the patient with atrial fibrillation has a more advanced degree of valvular pathology which would compromise the quality of his surgical result, this was not strikingly apparent from the study. He did experience a somewhat higher operative mortality rate over and above that due to embolization than the patient with normal sinus rhythm, however, his chances of obtaining a good result if he survived were similar. The reduction in good results in the atrial fibrillation group was mostly accounted for by the increased mortality rather than a proportional increase in the poor results. That portion of the increased late mortality due to emboli in patients with atrial fibrillation however, may be construed as evidence favoring a different surgical approach since the postoperative patient should not be expected to form left atrial thrombi unless significant residual stenosis is present.

During the twelve year history of mitral stenosis surgery, several technical maneuvers have been proposed and tried for the prevention of cerebral embolization. These consist of external carotid compression, intrathoracic carotid artery clamping and atrial flushing.[4,5] Even if these preventative measures met with the hoped-for success, the post discharge embolic deaths (30 percent of the total deaths due to emboli) remain to downgrade the long term results in patients with atrial fibrillation. Unfortunately, the value of these maneuvers has been limited in our experience as evidenced by the occurrence of 12 fatal and 7 non-fatal cerebral emboli during the period in which they have been practiced. Advocating pump oxygenator surgery for patients with a high incidence of embolization presumes that the method will prevent all deaths and morbidity from this source as well as avoid an increased hazard from the method itself. Due to the limited experience up to this time, the premise remains to be proved. Convincing support for the value of the operation in preventing emboli however may be derived from two obvious features of the open operation. These are the near complete control over left atrial thrombi afforded the surgeon during open atriotomy and the greatly increased mobilization of leaflet and subvalvular tissues possible in all but the most severely deformed and calcified valves. As concerns the introduction of a greater hazard due to the technical aspects of open heart surgery, increasing experience indicates that at the present time the morbidity and mortality of extracorporeal perfusion by an experienced team is with but uncommon exception the morbidity and mortality of the disease process under treatment rather than that of the procedure.

Our experience with open mitral valve surgery consists of 34 operations performed in

TABLE II: OPEN HEART OPERATIONS FOR MITRAL VALVE DISEASE

	No. of Patients	Deaths
Mitral insufficiency	13	8
Mitral Stenosis	13	3
Mitral Stenosis and insufficiency	4	2
Mitral and tricuspid stenosis	1	1
Mitral and aortic stenosis	3	1
Total	34	15

the four year period between September 1956 and September 1960. Thirteen of these procedures were carried out for pure stenosis, 4 for combined stenosis and insufficiency, 3 for combined aortic and mitral stenosis and 1 for mitral and tricuspid stenosis. Table 2. There were 3 deaths in the pure mitral stenosis group of 13 patients. One patient expired from massive pulmonary embolization on the 3rd. postoperative day, one from an anteroseptal myocardial infarction and the third from arterial embolization to brain, liver, kidneys and small intestine. The tragic events leading to the death of the third patient occurred while the patient was under anesthesia prior to atriotomy. The left atrium was free of thrombi when entered during cardiopulmonary by-pass. The indications for open surgery in the 13 patients with pure mitral stenosis were: restenosis in 9 and preoperative arterial emboli in 4. The survivors in the pure stenosis group have shown an impressive rehabilitation to normal activity.

Two illustrative cases demonstrate preoperative embolic disease and restenosis of the valve as indications for open commissurotomy.

Case Reports

1. M. L., a 54 year old school teacher gave a history of rheumatic fever at age 12. There had been a recent series of vascular complications involving both legs. These began with an episode of thrombophlebitis in the left leg 6 months prior to admission. Two subsequent recurrences followed along with two clearly embolic processes in the right lower extremity. At the time of admission to Henry Ford Hospital on Nov. 3, 1958, the pulses below the right femoral artery were not palpable and there was excessive palor on the right side after elevation of the legs. A history of increasing but moderate disability due to dyspnea on exertion was obtained. The cardiac findings consisted of a rumbling apical diastolic murmur and an opening snap. There was a lesser systolic murmur in the same area. Auricular fibrillation was present. Due to the history of recent multiple bouts of arterial embolization, an open operation for mitral stenosis was recommended and carried out on Dec. 9, 1958. During 35 minutes of cardiopulmonary by-pass using a bubble oxygenator, large amounts of friable thrombus were removed from the left atrium and a one finger valve enlarged to normal size by incising both commissures (Fig. 3). During convalescence a normal sinus rhythm was present for the first 5 days followed by return to atrial fibrillation. The patient was discharged on the 15th postoperative day and has returned to schoolteaching. Faint diastolic and systolic murmurs were audible on examination of the heart 11 months postoperatively.

2. A. B., a 33 year old housewife had rheumatic fever at the age of 17 years. She was admitted to Henry Ford Hospital Feb. 19, 1956 with a 3 year history of increasing dyspnea, easy fatiguability and ankle edema. Hemoptysis had been noted during severe dyspnea. Typical clinical and radiologic findings of pure mitral stenosis were noted. There was a normal sinus rhythm. Conventional mitral commissurotomy was carried out on Feb. 21, 1956 and the patient was discharged on the 14th postoperative day after an uneventful convalescence. The sur-

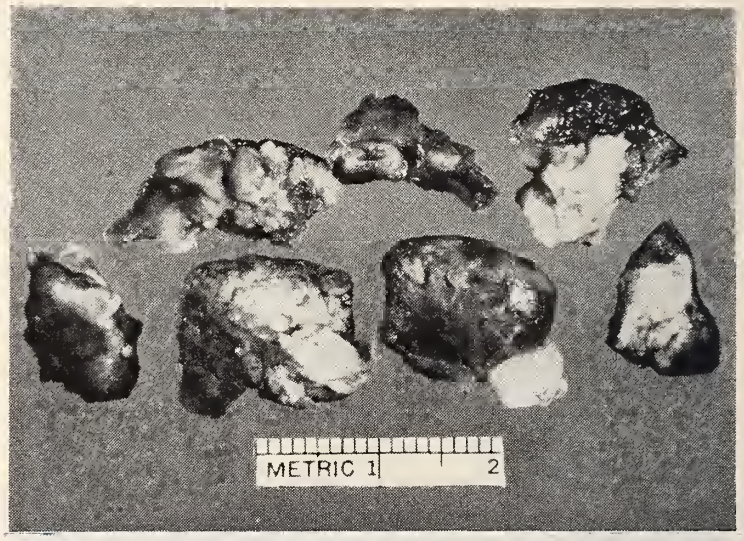

Fig. 3. Left auricular thrombi removed from patient M. L. at time of open mitral commissurotomy with extracorporeal perfusion. Two peripheral embolic episodes preceded open commissurotomy.

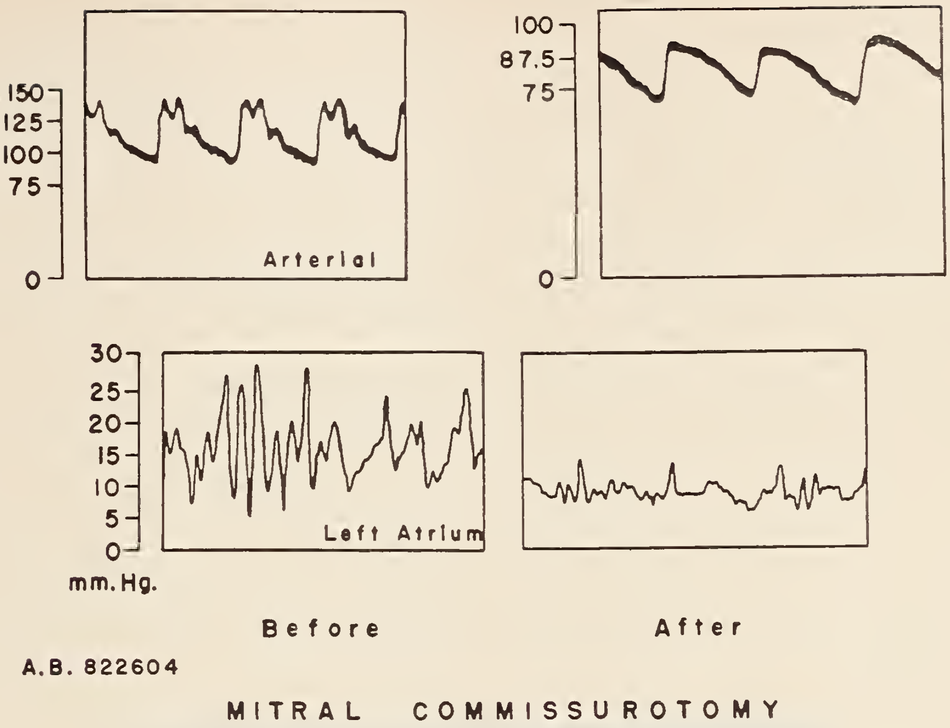

Fig. 4. Tracings of arterial and left atrial pressure readings obtained in the operating room at the time of open mitral commissurotomy for restenosis of the valve. Closed mitral commissurotomy had been performed 4 years previously. The mean left atrial pressure was 22 mm. of mercury before and 8 mm of mercury after opening the valve.

geon described enlarging the one finger size valve orifice up to two fingers by commissurotomy and fracture. The clinical course was satisfactory for 2 years, after which increasing dyspnea and fatigue reappeared requiring hospitalization twice for treatment of congestive failure. Cardiac findings consisted of an apical diastolic murmur with presystolic accentuation. Left heart catheterization revealed a mean left atrial pressure of 26 mm. of mercury. There was a 15.5 mm. of mercury diastolic gradient across the mitral valve. This information was interpreted as indicating moderately severe mitral stenosis. Reoperation which was performed on Jan. 7, 1960, consisted of cardio-pulmonary by-pass of 20 minutes duration using a stainless-steel bubble oxygenator. Left atrial pressures were measured before and after commissurotomy (Fig. 1). The valve opening which was finger tip in size was readily enlarged by incising both commissures. A normal sized valve orifice without regurgitation resulted. Recovery was uncomplicated and discharge from the hospital occurred on the 14th postoperative day. When last seen 6 months postoperatively, her physical activity was normal and the cardiac findings consisted of a faint early diastolic murmur in the lateral decubitus position. A normal sinus rhythm was again noted.

Since closed mitral commissurotomy produces a completely satisfactoy restoration of valve function in some patients, variously estimated as 20 to 70 percent,[3,6] open mitral surgery is recommended for selected patients with a high operative and late mortality and those likely to receive unsatisfactory correction of their stenosis. Patients who have experienced preoperative emboli exemplify the former and patients with restenosis the latter. Further expansion of the indications for open surgery in mitral stenosis should include any patient with atrial fibrillation due to the significantly increased morbidity and mortality as well as poorer late functional results observed in this entire group of patients.

Summary

1. The results attained in 426 mitral commissurotomy patients who have been followed from 2 to 8 years have been summarized. The short and long term results were observed to be significantly different depending on whether atrial fibrillation was present.

2. In an attempt to clarify the indications for open mitral commissurotomy in mitral stenosis, those patients with a high operative and late mortality as well as poor late functional results have been further studied. 200 (43 percent) of the 426 patients had developed atrial fibrillation by the time of commissurotomy. This group of patients received the most unsatisfactory results, largely due to fatalities occurring from arterial embolization. 70 (35 percent) of this group experienced arterial emboli at some time. There was a 27 percent incidence of operative or postoperative embolization, in those patients who had experienced emboli preoperatively. Measures to prevent operative cerebral embolization were not completely effective. Postoperative embolization resulted in a fatality in 56 percent of the occurrences.

3. The results of 34 open operations on the mitral valve are presented. Thirteen of these procedures were carried out for pure mitral stenosis and four for combined stenosis and insufficiency. The indications for open surgery in the patients with pure stenosis were: previous embolic disease in 4 cases and restenosis in 9. Examples of each type are given. The high operative mortality and poorer late results attained with the closed operation in all patients with atrial fibrillation indicate that this finding is probably sufficient indication for open mitral commissurotomy.

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PUZZLING CLINICAL ENTITY

Two Bellevue Hospital doctors have reported on a puzzling clinical entity involving newborn babies. The two day old child squirms violently, seems hungry but ignores a bottle, screams, cries, is nauseated. Diagnosis: Drug withdrawal following birth when mother is an addict. Untreated, the mortality rate is 93 percent. Treatment is a variant on that for adults, involving use of drug substitute, moist oxygen and nasal or intravenous feeding.

Emotional Stress in the etiology of CORONARY HEART DISEASE

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THE LIFE OF A PEASANT in the Yangtse Valley with the ever-present menace of flood, famine, pestilence and war"[1] is far more stressful than that of the American adult male. Yet the paucity of findings at autopsy among peasants in India is in sharp contrast with the virtual omnipresence of atherosclerosis in our own adult male population. To many students of the disease, such evidence constitutes proof that emotional factors are relatively insignificant in the etiologic spectrum of atheromatosis. The findings, however, justify only the conclusion that stress does not cause coronary artery disease in persons subsisting on a low-fat diet. While the same deduction is also valid for heredity, there can be no denial of the etiologic importance of this factor[2] in Western societies like the United States where large amounts of fat are ingested and coronary artery disease is rampant. Although little consideration has been given to the possibility that, in a similar setting, psychological stress may also acquire atherogenic potency, many independent observations actually lend support to this concept. Certainly, in animals, a variety of stressful stimuli have been shown to induce an intensification of the atherosclerotic process experimentally produced by an atherogenic diet.[3] That a similar response may occur on a clinical level among persons subsisting on a high-fat diet is strongly suggested by the fact that special situational stresses have been repeatedly observed as antecedent events to episodes of coronary occlusion.[4-6] Even more convincing is the finding that young coronary patients accustomed to a "typical" American diet could be differentiated from healthy controls to far more readily by the dimensions of stress than by differences in heredity, diet, obesity, tobacco consumption or physical exercise.[6] Thus, of 100 coronary patients, 40 years of age or younger, 25% had been holding down two jobs, and an additional 46% had worked 60 hours or more per week for long periods immediately preceding the onset of symptoms. Although prolonged emotional strain associated with job responsibility had preceded the attack in 91% of these 100 cases, similar stress was observed in only 20% of controls. As a check on the validity of these findings, Buell and Breslow[7] attempted to determine the relationship of one dimension of job stress, namely, long work hours, to the mortality risk from arteriosclerotic-coronary heart disease. From a study of the registered mortality of men in California, together with Census occupational data on work hours, they obtained evidence that light workers under the age of 45 who are on the job more than 48 hours a week have twice the risk of mortality from coronary heart disease compared to other light workers of similar age.

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The significance of stress in the etiology of coronary artery disease in Western society is further underscored by the frequency with which certain attitudes and behavior patterns have been encountered in studies of coronary patients.[6,8-10] There can be little doubt that "hard-driving, goal-directed" traits[9] are far more common among youthful candidates for the disease than among those of similar age who are less prone to coronary atherosclerosis. Thus, while the young patient was found almost invariably to have been a victim of overwork, this had frequently resulted not so much from the demands of the job itself as from an unrelenting drive, an intense desire for recognition, inability to delegate responsibility to others, compulsiveness about time, restlessness during leisure hours and a sense of guilt during periods of relaxation.[6] If such traits are more common among potential and actual victims of the disease than among others, it follows that an unexpectedly high incidence of coronary atherosclerosis should be found in random sampling of persons possessing these characteristics. The studies of Friedman and Rosenman [11,12] have actually demonstrated the validity of this correlation. Their findings indicate that clinical coronary artery disease is far more frequent in hard-driving, ambitious subjects oriented toward competitive activities with deadlines, than in anxious but noncompetitive people or more passive subjects.

While behavior patterns may generate "stress" independently of the demands of the job, there is good evidence to indicate that occupational responsibilities are directly related to coronary heart disease prevalence rates. In a recent survey of 4,000 physicians, a close correlation was found between the stressfulness of routine professional activities and the prevalence of clinical coronary atherosclerosis.[13] Information was obtained on four medical groups, of which two were judged to be in a "high stress" area of medical practice (General Practitioners and Anesthesiologists) and two in a "low stress" area (Pathologists and Dermatologists). Of the four professional categories, the prevalence of coronary disease was least among Dermatoligists 40 to 69 years of age and highest among General Practitioners in the same age group (3.2% as compared with 11.9%). Anesthesiologists were found to have an overall rate of 8.9%, or more than twice that calculated for Dermatologists and Pathologists. The increasing prevalence rate observed in each age group with advancing stress (Dermatology → Pathology → Anesthesiology → General Practice) was found to be highly significant statistically. These findings are in accord with observations in England which have demonstrated a significantly higher incidence of the disease in practitioners than in specialists and other population groups.[14] They are also supported by studies at the Mayo Clinic[15] which indicate that physicians, as a whole, have a higher prevalence of coronary disease than any other professional or nonprofessional group—presumably because of the greater stressfulness of the doctor's life.

Confirmatory, though indirect, evidence of the role of stress in the etiology of coronary artery disease is offered by observed differences in tobacco consumption in coronary and control groups. It is now fairly well established that, compared with findings in the general population, a significantly higher proportion of candidates for coronary disease are heavy smokers. It must be conceded from this finding that either excessive consumption of tobacco is causally related to clinical coronary artery disease or that such addiction, unimportant in itself in pathogenesis, is merely a reflection of underlying psychological stress. The data of Friedman and Rosenman[11] suggest that excessive smoking is not a causal agent of the high incidence of cardiac disease observed among persons manifesting a behavior pattern characterized by an intense, sustained drive for achievement. Thus, while heavy smoking was significantly more frequent in this group, clinical disease was found to be equally prevalent among nonsmokers as among heavy smokers with these behavior characteristics. It would seem, therefore, that excessive smoking, like over-eating and failure to obtain adequate exercise, is commonly a by-product of psychological stress.

If emotional strain of occupational, cultural, social or domestic origin compounds the lethalness of a high-fat diet, it is important to consider the extent to which dietary fat alone, and in combination with "stress," respectively, contribute to morbidity and mortality from coronary atherosclerosis in modern society. Since the pace of life is almost invariably stressful among populations subsisting on a high-fat diet, the atherogenicity of dietary fat per se is most difficult to estimate. None the less, some insight into this question is obtained from the findings reported from a study of Benedictine and Trappist monks.[16] Although both groups live in rural areas, removed from the stresses of urban living and in the monastic life are free from economic and family problems, significant differences exist with regard to dietary fat consumption. Thus, the Benedictines have a diet substantially the same as that of other Europeans in their area, while the Trappists eat no meat, fish, eggs or butter. Despite a greater consumption of fat and a much higher average level of blood cholesterol among the Benedictine monks, no striking differences were observed in coronary heart disease prevalence. Although chest x-rays revealed fewer arterial changes among the Trappists, ECG studies disclosed not a single instance of significant disease under the age of 65 in either group. Moreover, both groups showed a far smaller incidence of coronary disease than the general population. These observations, therefore, appear to support the view that most of the lethalness of a high-fat diet in our society is dependent on the "catalytic" influence of stressful living.[17]

Comparable evidence is available from the animal kingdom. In mammals and birds at the Philadelphia zoo, improved diets over a period of ten years were found to have exerted little influence on vascular lesions.[18] During the second decade of adequate nutrition, however, arteriosclerosis of the coronary arteries has been reported as relatively common in both mammals and birds. This recent change has been ascribed not to diet, but to psychologic disturbances associated with increasing population densities in the zoo. If these observations are also applicable to Western man, the almost limitless fecundity of the human race could be contributing to an absolute increase in coronary artery disease incidence. That the death rate from coronary heart disease is significantly higher in metropolitan communities than in rural areas has been clearly demonstrated by a recent nationwide survey.[19] Since there are almost a million new children born into the world every week,[20] one may wonder with Piddington[21] whether "the human race . . . . will stop far short of turning the whole world into one vast Black Hole of Calcutta." Assuming that the high-fat diet of Western society will be perpetuated by Science and extended to economically under-developed countries of the world, an ever-increasing incidence of coronary disease geared to population growth and the mounting tensions of "civilized" life may be inevitable unless effective prophylactic measures are discovered and applied. It seems ironical that many of the survivors of Nazi concentration camps and occupied countries during World War II may have succumbed from coronary disease had a "typical" American diet been substituted for the meager rations upon which they were forced to subsist.

It appears incongruous that many investigators, who repeatedly emphasize the increased likelihood of coronary disease when obesity, hypertension and hypercholesterolemia are present,[22-24] assign only a secondary or insignificant place to psychological stress in the etiologic picture of coronary artery disease. Inasmuch as stress itself initiates and/or aggravates obesity, hypertension and hypercholesterolemia, it is difficult to comprehend existing indifference toward this important factor. According to Bruch,[25] obesity is a manifestation of a disturbed way of life, a symptom dependent on a variety of underlying, interacting disturbances — biologic, emotional and social. Similarly, Shapiro[26] has stated: "There is ample evidence that physiologic pathways exist by which emotions can be translated into blood pressure elevation. Such effects are undoubtedly responsible for many of the acute and even chronic rises in blood pressure seen in hypertensive individuals, and are probably among the factors causing aggravation of the disease." In like manner, numerous investigators[10,27-29] have shown that stressful life experiences are capable of evoking hypercholesterolemia. Thus, even without other specific actions, these influences must be deemed highly significant.

It has also been claimed by some[30,31] that effects attributed to stress are, in reality, the consequence of improper diet, excessive smoking and inadequate exercise—which it commonly evokes. Even if true, the assertion that stress is, therefore, an unimportant etiologic factor in coronary disease appears as illogical as the denial that alcoholism is a potent factor in cirrhosis of the liver. In the stressful society in which we live with the inescapable temptation from food, tobacco and automobiles, the average man, under the social, domestic and occupational pressures of every-day life, appears to have little more control over his habits and mode of life than the chronic alcoholic. It is only during rest periods between stressful life situations, as between bouts of alcoholism, that measures directed toward the prevention of atherosclerosis, or cirrhosis, can be effectively applied. Consequently, concentration on diet alone, without due consideration of the role of stress, can meet with only very limited success in the prevention of atherosclerosis in areas where it is now rampant.

Although it appears clear that the best prophylactic measure against clinical coronary artery disease is subsistence on a diet low in animal fat, there can be little hope that drastic dietary restriction will ever become popular in areas where it is not already prevalent. Consequently, only one hopeful alternative now exists, namely, moderate reduction of dietary fat compatible with tolerance and the adoption of a more prudent way of life.[17] The fact that many persons subsist on a typical American diet all their lives without developing clinical coronary disease offers hope that hormonal, biochemical or other means may yet be discovered to extend this "immunity" to all mankind. It appears unlikely that management, directed solely at reduction of blood cholesterol without simultaneous efforts to neutralize psychophysiologic mechanisms induced by environmental stress, can be significantly effective.

A striking similarity exists between the role of stress in atherogenesis and that of infection in diabetes mellitus. While neither factor alone is capable of causing the respective disease, each may greatly augment pathogenic mechanisms once the disorder has appeared. But here the analogy ends, for while *infection* today is relatively uncommon, easily recognized and readily amendable to therapy, *stress* is ubiquitous, passively accepted as the inevitable fate of all mankind, frequently overlooked even in its severest form or discovered too late, resistant to most forms of management and without specific antidote. Indeed, the future progress of medicine may yet demonstrate that many physicians of today are as insensitive to the subtle role of stress in human disease as were those of the 19th century toward that of bacteria.

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SLIPPING ANKLE FRACTURES

This paper emphasizes instability following ruptured deltoid ligament associated with a fractured lateral malleolus. It must be supected to make the clinical and roentgenologic diagnosis.

With the deltoid ligament torn and the lateral malleolus fractured, the ankle may shift even after a good reduction as shown in x-rays. Maintenance of displacement may lead to crippling disability. An intact deltoid ligament limits talus displacement laterally to 3 mm. or less. Greater shift is associated with complete rupture of the ligament.

Example: A simple fibular fracture failed to reduce and a lateral shift of the talus was demonstrated. Manipulative reductions failed and an open reduction of the fibula did not bring the talus to the medial malleolus. Later, another surgeon osteotomized the fibula. The talus remained displaced. Eight months after injury, the third surgeon recognized the torn deltoid ligament. At surgery the ligament was extricated from between the talus and the medial malleolus and replaced in its normal relationship to the tibia.

Because of this type of situation, clinical study between 1950 and 1959 at the Fracture Service of the New York Orthopedic Hospital was undertaken. Four hundred and ninety ankle fractures were treated during this period. 6.7 percent (or 33) had fractures of the lateral malleolus with associated ruptured deltoid ligament.

Analyzing the operative cases, it was found that the ligament was torn from the medial malleolus in sixteen cases. In ten of these, the ligament was incarcerated between the talus and the medial malleolus constituting a mechanical block against reduction. One case was an open one with the medial malleolus protruding through the skin. In the nine other operative cases, the ligament was torn through its body in six and torn from the distal insertion in three. The ligament was not trapped in the joint when it was torn through its body. In the three cases of distal avulsion, the posterior tibial tendon was deep to the ligament which was the reverse of the usual relationship. In eight of the operative cases, chips of bone cartilage, not shown in x-ray, were found in the joint and removed.

The authors feel that more than 50 percent of the cases operated upon demonstrated lesions for which operative treatment was mandatory to a good result. If the talus can be put in perfect apposition to the medial malleolus, it is likely that the ruptured ligament is not between the talus and malleolus. One cannot be certain of the relationship of the posterior tibial tendon, however. In 10 percent of the cases, it was in an improper relationship.

In the operative cases, the fibular malleolus was reduced, usually by intramedullary devices. The medial ligament was explored and repaired in these cases. The post operative course was that of an ordinary cast for a few days followed by a snug walking boot and progressive ambulation after about ten days.

Failure to reduce the talus to the medial malleolus suggested incarceration of the avulsed ligament. Such cases should be treated by operative reduction and fixation of the ligament. All possible initial information following accidents, especially those occurring in ski areas, should be forwarded from the initial surgeon to the attending surgeon at home so that proper follow-up care may be carried out depending upon severity of the symptoms. Since the x-ray reveals only the fractured fibula in the instances of good reduction associated with torn deltoid ligament, the home physician will not know the need for protection for the usual eight or ten weeks unless he has knowledge of the tear of the medial ankle ligament.

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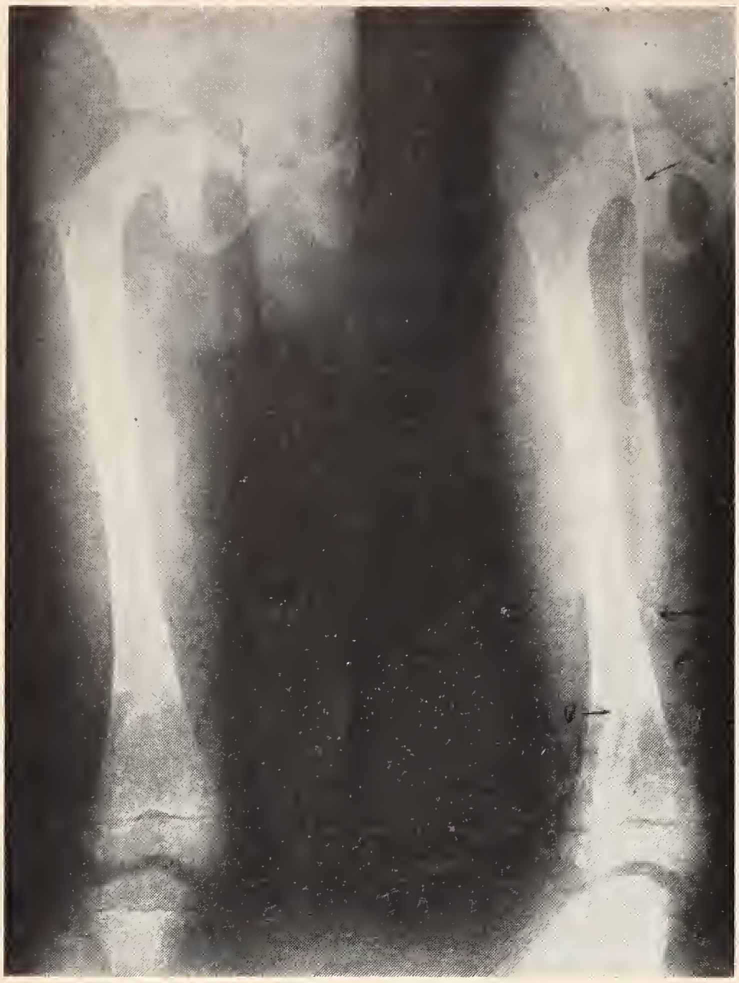

Fig. 1A

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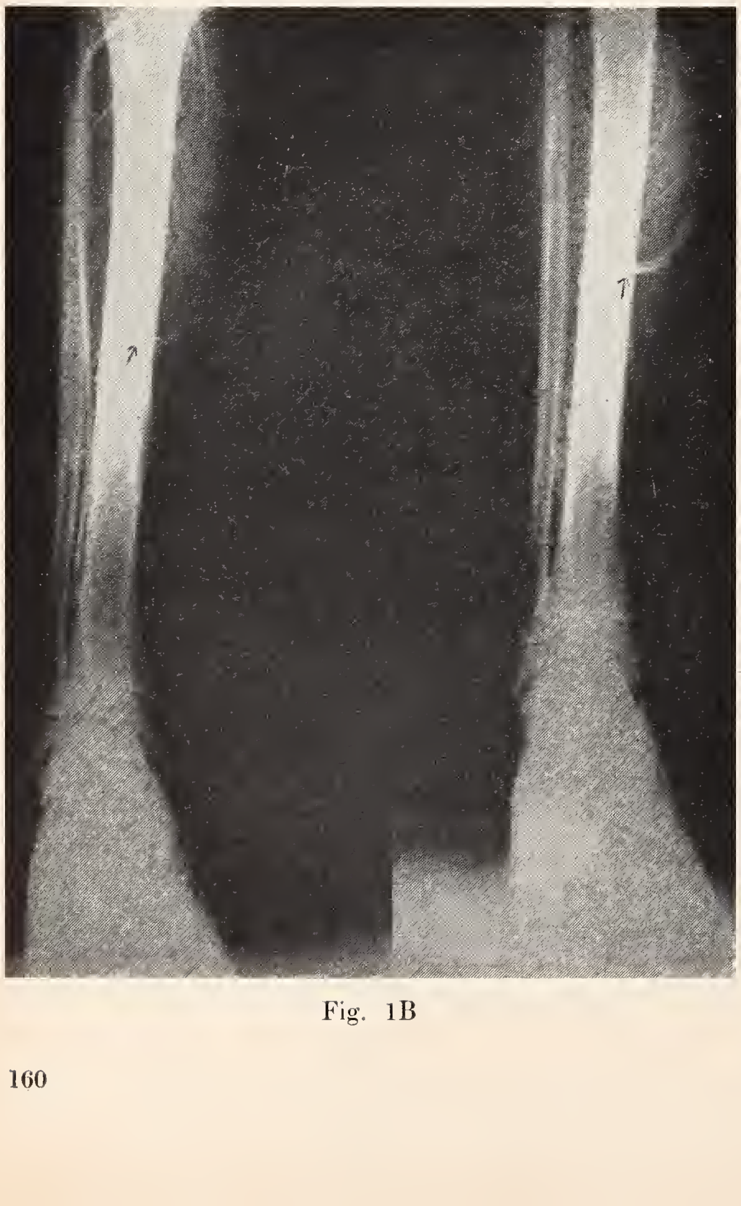

Fig. 1B

CLINICALLY significant congenital arteriovenous fistulas of the extremities are relatively uncommon. Hewitt is credited with the first description of a case of congenital arteriovenous fistula in 1867.[1] Reid[2] in 1925 detailed 27 cases of abnormal arteriovenous communication, six of which were congenital. By 1956, the Mayo Clinic[3] had recorded 69 cases of congenital arteriovenous fistula of the extremities. Cross[4] estimated in 1958 that there were approximately 200 cases of the congenital variety reported in the literature. We have studied 37 such patients in the past 20 years, sixteen of these having their disease confined to the extremities. This entity has been variously termed arteriovenous fistula, arteriovenous aneurysm, cirsoid aneurysm, abnormal arteriovenous communication, arterial varices, and racemose aneurysm. The confusion of terminology is due, in part, to uncertainty as to the embryologic basis as well as to the precise nature of the pathology of the condition. We prefer the term arteriovenous fistula.

TABLE I
SYMPTOMS AND SIGNS OBSERVED IN 16 CASES

	Number	Per Cent
Varices	12	75 %
Hypertrophy	9	56 %
Hemangloma	7	44 %
Pain	7	44 %
Increased warmth	6	37 %
Compressible mass	6	37 %
Bruit and thrill	5	31 %
Elevated B.P. in limb	4	25 %
Edema	4	25 %
Branhams sign	2	13 %
Ulceration	2	13 %
Stasis changes	2	13 %
Cardiomegaly	2	13 %
Clubbing	1	6 %
Paresthesias	1	6 %

Congenital ARTERIOVENOUS FISTULAS of the extremities

BLOOD VESSELS of the extremities arise from a capillary network and are intially indifferentiated in function. Later in fetal life they assume their mature roles as either arteries or veins. If development is disturbed or arrested at some immature stage, multiple fetal type communicationts may persist. With this background in mind, it is easier, as Reid[2] has pointed out, to account for the presence of precapillary arteriovenous communications than it is to account for their absence. Normal persons do, in fact, have multiple arteriovenous shunts located in the terminal phalanges, palms, lips, tongue, and the eye lids. These apparently serve a heat regulatory function. The presence of shunts in the fingers has found clinical application by the cardiac surgeons.[5] They have been able to obtain blood essentially arterial in character from veins simply by heating the arm of a normal donor, thereby opening the shunts.

Material

This paper is a compilation of observations made on 16 cases of congenital arteriovenous fistula of the extremities at the University of Minnesota Hospitals in the years 1939 through 1958. During this same period, 23 traumatic arteriovenous fistulas have been seen. Congenital communications involving the vessels of the head, neck, coronary circulation, pulmonary circulation, or the great vessels have not been included. Twenty-one of these were found in reviewing the hospital experience for the past 20 years.

In this series of congenital arteriovenous fistulae as in others, no sex predominance was noted; there were eight females and eight males.

Ages at the initial visit ranged from 5 to 45. Changes had, in every case, been noted at an early age, almost always shortly after birth.

Location

In five cases, an upper limb was involved. Nine patients had their disease confined to one leg and two had bilateral leg involvement. Of the Mayo Clinic cases, lower limb lesions constituted 74 percent.[3] Other series also have shown that clinically there is a greater incidence of this lesion in the legs than in the arms. This may represent a real predominance of congenital arteriovenous fistulas in the legs or it may simply mean that symptoms are more likely to occur in the dependent limb with its greater susceptibility to venous hypertension. Traumatic arteriovenous fistulas and centrally located congenital fistulas are as a rule well localized, and, in fact, are often solitary communications. Such is not the situation in the limbs. Only one of our cases presented a well localized lesion. Twenty-six per cent of the Mayo Clinic cases were said to be local in character.

Signs and Symptoms

Varices

In 12 of our 16 cases, varices were a prominent finding. This included all of the patients with leg involvement and one with an affected arm. The accentuated venous pattern, particularly in the arms, is not necessarily identical to usual varices and perhaps the term phlebectasia would be more accurately used. The cause of the venous dilation is obviously increased venous pressure referred from the systemic arteries through the shunts. Unilateral phlebectasia in either an arm or leg therefore should always suggest the possibility of underlying arteriovenous fistulas.

Limb size

The involved limb was larger than its mate in 9 of 16 or 56 per cent of our patients. The increased size was both in length and in girth. Increased circumference, alone, should not be interpreted as hypertrophy, for it may merely represent chronic edema. While blood flow to the involved limb itself is increased, perfusion of the peripheral tissues is actually decreased by the demands of the parasitic fistulas. It is paradoxical that overgrowth should occur in such a limb. Foster and Kirtley[6] recently reported four cases of unilateral hypertrophy associated with venous obstruction alone and reviewed the literature regarding this phenomenon. Citing the observation that experimental venous obstruction in puppies will produce limb hypertrophy, they postulate that venous hypertension of itself is the stimulus to overgrowth. Clinical use has been made of this overgrowth by Janes[7] who has surgically created arteriovenous fistulas in children to speed the growth of short legs. He reports a number of successful results and no serious complications.

Temperature

Increased warmth of the involved limb is a suggestive finding. It was present in seven of our 16 cases. A reflection of increased flow, it provides a crude indication of the areas of greatest involvement.

Hemangioma

The association of congenital arteriovenous fistulas with hemangioma has long been noted. Hemangioma is thought by some to represent a maldevelopment of the venous side of the fetal circulation.[8] Presence of this superficial vascular malformation should suggest to the clinician the possibility of abnormalities in the deeper vessels. Seven of this group, or 44 per cent. had hemangiomas, mostly of the port-wine variety.

Pain

Pain was listed as a complaint in 7 of the 16 cases. It varied in character from a dull ache to the superficial burning pain associated with ulceration. One patient complained of paresthesias in the involved limb.

Bruit and Thrill

Bruit and thrill, when present, are most helpful diagnostic signs and were elicited in six of our group. Their absence in the majority of cases is perhaps explicable by the diffuse character of the disease and by the fact that the shunts are of extremely small diameter and thus not so likely to result in audible or palpable turbulence.

Mass

A compressible vascular mass was noted in 6 or 37 per cent of the cases.

Edema

Edema was noted in 4 or one-fourth of the cases. Two factors operate in its genesis: increased venous pressure and small vessel hypoxia.

Branham's Signs

Branham's sign consists in a slowing of the pulse rate when the flow through the fistulas is blocked. It is, in essence, a pressor reflex stimulated by the rise in blood pressure which occurs when the low resistance circuit is occluded. That atropine will block this reaction indicates that it is mediated by the parasympathetics. For clinical purposes the sign is elicited by placing an occlusive tourniquet proximal to the fistulas. The test was attempted on 5 patients and a significant drop in pulse rate noted in two of the five.

Ulceration

Cutaneous ulcers were present in 2 patients. Ulceration associated with arteriovenous fistula is secondary to tissue hypoxia, ischemia, and venous hypertension. In contrast to the much more common stasis variety, these ulcers are usually located on the distal portions of the digits, are extremely resistant to conservative treatment, and are frequently quite painful.

Blood Pressure

In four of the 16 cases elevated blood pressure and widened pulse pressure were noted in the involved limb.

X-ray Studies

Arteriography was carried out in 9 patients and in all was consistent with congenital arteriovenous fistulas. Murphy and Margulis[9] have discussed the x-ray changes found in congenital arteriovenous fistulas of the extremities. They list as primary diagnostic signs. 1. Venous rete formation, a plexus of arterialized veins, usually seen in the ankle area. 2. Rapid venous filling; that is, superficial veins are opacified by contrast material simultaneously with the arteries. Other diagnostic findings noted were segmentation, H-formation, and nontapering of peripheral arteries. In the exceptional case the fistulas themselves may be visualized. While arteriography is not usually necessary to make the diagnosis, it provides the surgeon with a preoperative estimate of the area of greatest involvement and lends objective support to his clinical impression. (Figures 1A and 1B).

Oxygen Studies

Venous oxygen saturation studies were done in three patients. Two of these showed oxygen levels in the arterial range. The third had obvious arteriovenous fistulas clinically and radiologically but the blood had been taken from a foot vein and was venous in character. If this test is to be significant, the blood must be withdrawn from a vein in the area of, or proximal to the suspected arteriovenous communication. Veal[10] suggested that blood be withdrawn from veins isolated above and below by tourniquets, thereby ascertaining the area of the arteriovenous communications by noting from what segments arterialized blood is obtained. This was not attempted on our series, but in selected cases it might prove useful.

Circulation Time

The femoral artery to heart circulation time was proposed by Murphy[11] as a diagnostic tool for this condition. It is carried out by injecting radioactive material into the femoral artery and measuring its transit time to the heart by means of a counter held over the area of the right atrium. In adult normals, this time exceeds 20 seconds. In the presence of a short circuiting arteriovenous communication, the rapid venous flow carries the radioactive material to the heart in less than 9 seconds. Two patients in the present series underwent this procedure, the circulation times being one and four seconds respectively.

Cardiac Complications

Clinical and experimental studies have shown that arteriovenous fistula is associated with increased venous return, increased cardiac output, and frequently an expanded blood volume.[12,13,14] High output heart failure may result from these alterations in circulatory dynamics. Four or 25 per cent of our cases had roentgenological evidence of cardiac enlargement. Two of these and one additional patient had electrocardiographic abnormalities. One patient complained of dyspnea, but none were in frank failure.

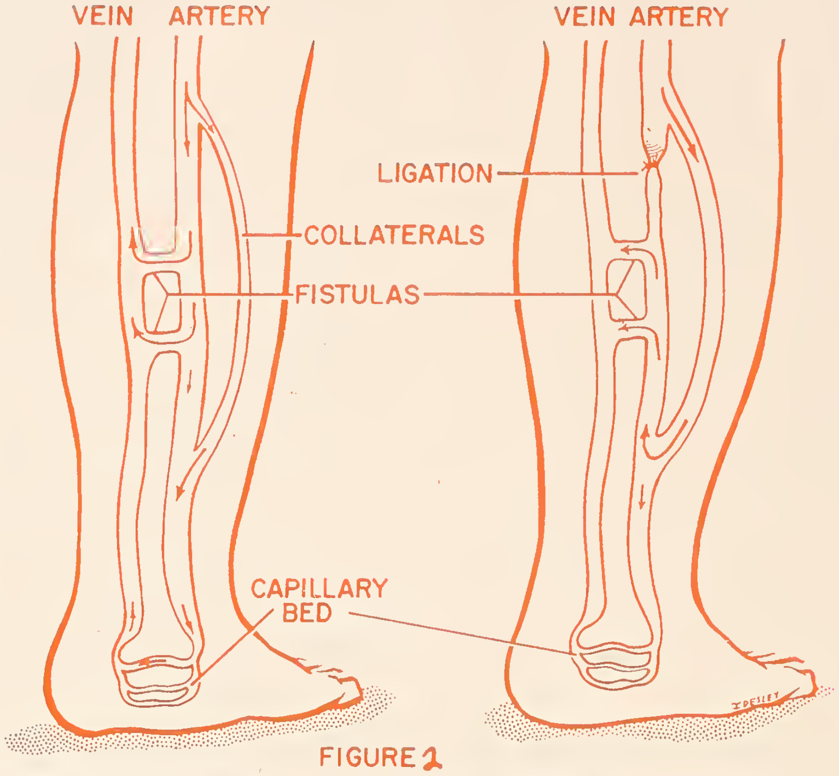

FIGURE 2
THIS SHOWS SCHEMATICALLY THE HEMODYNAMIC EFFECTS OF LIGATING THE ARTERY FEEDING THE FISTULAS. PERIPHERAL ISCHEMIA IS THE USUAL RESULT.

Treatment

As pointed out above, discrete large vessel fistulas are the exception. Such localized fistulas can and should be excised to relieve symptoms and to prevent their progression. They are handled in the same manner as their traumatic counterparts. Ideally, the fistulas are divided, the vein sacrificed, and the artery reconstituted. When this is technically impossible, quadruple ligation is carried out; that is, both participating vessels are ligated proximally and distally to the area of fistulization. It was not possible to do this successfully in any of our patients. It was attempted in case No. 5 (see accompanying table). Gangrene ensued and the patient eventually required a shoulder girdle amputation. Failure in this case was due to widespread distribution of the fistulas. Any procedure short of amputation would have failed to obliterate the fistulas. In an uncomplicated case — for example, traumatic arteriovenous fistula — the limb distal to the quadrupally ligated vessels is protected from ischemia by previously formed collaterals, the fistula being a potent stimulus to their formation.[2]

Ligation of the arteries feeding the fistulas would seem to be a reasonable procedure for reducing the volume of flow. It has been repeatedly shown, however, that interruption of the main arteries without ablation of the fistulas can lead to gangrene. The peripheral tissues are perfused chiefly by the extensive collaterals. If the main arteries feeding the fistulas are ligated, there is a reversal of flow distal to the fistulas, and the blood which had been going to the peripheral tissues now flows proximally following the path of least resistance through the fistulas (Figure II). Two of our patients had arterial ligations (No. 1 and No. 13). Neither was benefited.

The much more common pattern of diffuse fistulas at the arteriolar level presents an anatomic situation ill-suited to surgical attack. These fistulas are in the order of one-tenth mm. in diameter[15] and involve subcutaneous tissue, muscle, and often bone. Surgery for these patients is, at best, a whittling procedure undertaken with the hope of alleviating symptoms but with small expectation of complete cure. The procedure consists in ligating any grossly visible fistulas and, in addition, excising

TABLE II

CASE	INVOLVEMENT	SURGERY	RESULTS
1. 6-year-old male	Diffuse small vessel fistulas. No grossly visible communications	Profunda femoris and hypogastric arteries ligated	No improvement
2. 18-year-old female	Multiple fistulas of brachial, ulnar and radial vessels with bone involvement	Grossly visible fistulas divided	5 years postoperatively the bruit had disappeared. Symptoms were improved.
3. 45-year-old male	Diffuse A-V communication, left leg	No surgery	
4. 13-year-old female	Diffuse small fistulas over medial upper leg and labia majora	Subcutaneous dissection and stripping of labial varicosities	Recent surgery.
5. 31-year-old male	Fistulas involving brachial, vertebral, subclavicular and intercostal vessels as well as the humerus	1) Quadruple ligation of brachial vessels followed by gangrene, 2) supracandylar amputation, and 3) shoulder girdle amputation	Fistulas totally removed by amputations
6. 16-year-old male	Numerous minute fistulas of thumb and thenar eminence.	Subcutaneous dissection in two stages	No improvement
7. 9-year-old female	Right leg varicosities. X-ray showed fistulas. No discomfort	No surgery	Disease has not progressed at age 17
8. 19-year-old male	Varicosities. Arteriogram showed fistulas	Vein stripping	Questionable improvement
9. 9-year-old male	Right arm phlebectasia, clinically obvious A-V fistulas	No surgery	
10. 36-year-old male	Femoral vessels involved and also numerous small subcutaneous fistulas	Subcutaneous and femoral vessel dissection	Varicose veins and edema, both worse following surgery
11. 5-year-old female	Varicosities left leg. X-ray confirmation of arteriovenous fistulas	No surgery	
12. 24-year-old female	Multiple superficial A-V fistulas around knee and ankle with overgrowth of extremity	Surgery to correct disparity in limb size	Symptoms are unchanged
13. 30-year-old female	Left hand, radial and median vessels	Radial and median arteries divided. 4 further procedures (elsewhere). Left index finger amputated	Symptom free with functional hand
14. 52-year-old male	Both legs clinically involved	4 vein strippings (elsewhere)	No improvement
15. 14-year-old female	Multiple fistulas left foot at arteriolar level	Subcutaneous tissues excised	Bruit persisted postoperatively. More surgery planned
16. 30-year-old female	Diffuse small vessels involvement of left leg with varicosities	Amputation of middle toe, sub Amputation of middle toe, subcutaneous dissection over dorsum of foot and ankle (elsewhere)	Locally improved, more varicose veins developed in upper leg. Further surgery contemplated

fistula-bearing soft tissue, be it subcutaneous or muscle. Six of our patients underwent such an operation; three were improved (Patients 2, 13, 15) and one has undergone surgery very recently (Patient 4).

A difficult and frequently encountered circumstance is the presence of arteriovenous communications within bone. Two of this present group were found at surgery to have bony involvement and two others had x-ray evidence suggesting it. Nesbitt[16] has proposed a staged procedure for this entity which includes excision of the intraosseous fistulas with as much bone as necessary and restoration of the shaft by means of bone chips or bone grafts.

Amputation is the only invariably successful procedure as far as eliminating the fistulous flow. It becomes mandatory when lesser procedures prove inadequate for a patient in heart failure, with gangrene, or with intractable pain.

The accompanying table (Table II) summarizes the treatment undertaken and the followup results in these 16 patients. Satisfactory surgical results can be expected with some degree of confidence only in the exceptional cases where the disease is localized to a small area or where there is a single large fistula. It has been our experience and that of others that, in the diffuse type of congenital arteriovenous fistula of the extremities, there is a tendency for more communications to open up proximal to the surgically attacked area. Some clinicians[17] consider congenital arteriovenous fistula of the extremities as a condition that progresses with time, in some ways like a neoplastic process. They therefore advocate early and aggressive surgical intervention. Our results and the published results of others tend to make us somewhat more cautious in advocating surgery for these patients. There is, unfortunately, no other mode of therapy presently available. Cases should be selected with three factors in mind: 1. The severity of symptoms. 2. The progressiveness of symptoms. 3. The likelihood that a significant proportion of the fistulas can be excised. Prognosis must be guarded as experience has amply demonstrated that marked improvement is rare. Both the surgeon and the patient should be committed in advance to the multiple procedures which are so often needed to ablate this disease.

Summary

1. Sixteen cases of congenital arteriovenous fistulas of the extremities have been reviewed. The most common findings were varices, unilateral hypertrophy, hemangioma, pain, and increased warmth of the affected limb.

2. Useful ancillary studies are arteriography, venous oxygen saturation, and femoral artery to heart circulation time.

3. The only available treatment for the condition is surgery, but this often proves to be unsatisfactory because of the characteristic diffuse distribution of the fistulas.

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CANCER-SMOKING LEGAL DECISION

At least one group of people, a jury in Miami, Florida, has set a definite answer to the smoking-lung cancer question. A recent suit there, against a tobacco company by the estate of a man dead of lung cancer, absolved the company after a two week trial involving scores of experts both pro and con. Anti-smoking scientists, however, were heartened by the fact that the verdict related only to the state of knowledge in 1956, plan further contests.

Abstracts and Briefs

RADICAL SURGERY FOR GASTRIC CANCER

The authors sought to establish whether or not the recent increased use of extended surgery for gastric cancer significantly affected the end results of treatment. Previous studies showed a lower salvage with more radical surgery. Since the extent of the disease was usually greater in this group, this finding was not unexpected, and occasional salvage of apparently hopeless patients encouraged the wider application of an extended total gastrectomy within block removal of both omenta, distal pancreas and spleen.

The twenty year period of 1931-50 was compared with 1951-54. During the latter period, extended total gastrectomy was employed in 46.4% of curative resections, as against 4.9% in the previous ten years.

The overall results showed that, in comparing 1941-50 with 1951-54 operability rose from 85.9% to 91.6%, resectability fell from 43.0% to 39.0%, and five year survival remained constant at 9.1% of all patients seen with gastric cancer. Similarly, results in the group resected with hope of cure remained stationary. Operative mortality for extended operation remains high.

Next groups of patients with lesions of either proximal or distal stomach were selected. These could presumably have been resected by partial gastrectomy, but in some, extended total gastrectomy was performed. On the basis of results, the authors now believe that increased application of extended surgery has not significantly improved the outlook of the average patient with gastric cancer, and the operation is not applied to ali patients.

For proximal gastric lesions, they favor extended operation, since it may salvage patients not curable by proximal subtotal gastrectomy. With lesions of the distal third, subtotal gastrectomy is performed if it adequately encompasses the lesion. Larger lesions are treated by extended operation where feasible.

The authors conclude that extended surgery should be applied only on the basis of pathology found, rather than as a routine, and feel it is unlikely that more extensive surgery will improve end results.

This careful study demonstrates that routine application of a very extensive dissection has little effect on survival in patients with gastric cancer. The authors stress that planning individual operation in light of the pathologic findings at surgery is the most rational plan of attack. Obviously early localized lesions offer the best outlook. Early surgery for gastric ulcers will result in cure of unsuspected gastric cancer. In occasional cases, very extensive growths are cured by radical surgery. Every patient without proven distant metastases deserves exploration.

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VALUE OF CHOLECYSTOGRAMS?

In Germany, the incidence of cholelithiasis found at autopsies is 15 to 30 percent in men, 40 years old or over, and 30 to 40 percent in women. The incidence is widely variable.

Cholecystography is an important tool for evaluation of the gallbladder. New contrast agents producing a better shadow of this organ have become available in recent years. Visualization of the gallbladder by a radiopaque substance depends on absorption of the substance from the gut, on the ability of the liver to excrete the substance from the blood into the bile, on the flow of hepatitic bile into the gallbladder, and finally on the ability of the gallbladder to concentrate the bile.

Shortly after the inception of cholecystography there arose the concept of the gallbladder with diminished concentrating ability. Gallbladders which were unable to concentrate the contrast agent were also unable to concentrate bilirubin, because their ability to absorb water was impaired by inflammation. Non-visualization or poor visualization of the gallgladder with the older contrast agents could be interpreted as a sign of disease of the gallbladder mucosa, provided the agent was able to reach the organ.

A normal gallbladder shadow was thought to signify a normal gallbladder. The usual dose of the newer agents contains more iodine making visualization easier, and they are executed into the bile more efficiently.

The author compared preoperative cholecystograms with the pathology found in gallbladders removed surgically for chronic cholecystitis as minimal, moderate and severe. The data given suggests that poor visualization or non-visualization of the gallbladder with a modern oral (or intravenous) contrast agent strongly implies that the organ is diseased. On the other hand, a normal cholecystogram is quite compatible with moderate chronic cholecystitis.

While modern contrast agents fail to demonstrate inflammatory changes in the gallbladder as readily as did their predecessors, they facilitate visualization of calculi in the biliary system to some extent since they depend on concentration by the gallbladder to a much lesser extent. More than 90 percent of gallbladders which failed to visualize with these agents were found to contain calculi at surgery.

Presence or absence of contraction of the gallbladder after a fatty meal had no diagnostic significance in the experience of the author.

A normal cholecystogram does not rule out cholecystitis, especially when one of the newer oral or intravenous contrast agents is used. A normal cholecystogram should not deter one from making a diagnosis of cholecystitis, if the clinical findings warrant it. Tenderness of the gallbladder, most readily ascertained during fluoroscopy, strongly suggests inflammation of that organ.

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President's Letter

Some weeks ago, I received a very interesting letter. Its contents were intriguing, informative, but most of all, challenging. It was sent to me by Dr. J. A. Cosgriff, for himself and the other members of the Renville County Hospital staff. The letter told of the results of that community's survey of hospital and physician's costs for medical care of patients over sixty-five years of age.

The Renville Hospital staff and community have shown by performance and deeds what most of us have tried to prove by words and statements.

This survey (a detailed account of which can be found elsewhere in this edition) proves again that the system of medical practice, as exemplified in this country, is still the best approach in the care of the ills of our citizens. It should stimulate similar surveys in other sections of our state. We must have proof of positive action as well as positive words to stop the steady socialization of medicine.

This survey, although admittedly limited in scope, provided definite evidence that seventy-five percent of the patients over age sixty-five were able to pay their medical costs from private sources. The remainder were already adequately assisted by welfare agencies. This community was able to prove that there was no unmet need which required the passage of new Federal legislation with the Social Security approach to pay for the Senior Citizen's health care.

Through our State Office and the county medical societies, the A.M.A. has again alerted us to the resumption of the campaign by the liberal members of the new Congress for enactment of a medical care program for the aged, based on a compulsory Social Security tax for financing its costs. President Kennedy's proposed legislation introduced as the Anderson-King Bill, provides for the moment, only limited hospital, nursing home, home health, and outpatient diagnostic services. The measure is just another method of getting "a foot in the door" which could eventually open the flood-gates to complete socialistic control of medical practice. History has shown that when this type of legislation is enacted, it will be allowed to remain as is until the next political campaign, or session of Congress, whichever comes first. Then the same supporters who favored the original bill introduce amendments to expand the coverage by the simple method of removing the age limitation from sixty-five to sixty, and ad infinitum.

A tranquilizer in the form of non-payment of physician's fees is present in this bill. Proponents of the bill realize the opposition of thinking medical men to the Social Security approach. It is also obvious that the omission of this portion has a clever political motivation.

The sponsors hope this omission will lessen opposition of the unthinking physician to this legislation. When pressures have liberalized the age limitations to this type of legislation, the same proponents of Anderson-King type of legislation will exert their influence to include the payment of physician's fees.

All the propaganda which tends to prove that medical care of the aged under Social Security is necessary, is based on the erroneous assumption that these senior citizens, first, require that aid; and secondly, that they do not have the financial means to pay for it. If this is so, why, on the national level, are there not more of the fifteen million senior citizens on the public assistance rolls? The local survey made in Renville County does not indicate an inability to pay, or opposition to so doing.

We of the medical profession, know that the Kerr-Mills Law can do the job that needs to be done. It can do it quickly, effectively and economically. We, in this state as well as in the nation, must give it a chance to prove its worth before we let it die on the vine, or because of our inertia let the unsound and dangerous alternative be accepted.

* * *

We all are well aware that our State Office is always a bee-hive of activity, but that observation hits home as the month of May approaches each year. That is the month of our Annual Meeting. Many committees function to make it successful, but the crystalization of all plans finds its niche in the files of that office for activation.

Those of us close to that activation feel that our membership will look upon this year's program as an excellent one; versatile enough to satisfy all interests. Again, we will be honored by out-of-state talent sponsored by the various fields of medicine. But frankly, the feature this year is multiple: emphasizing first our abundant talent in our membership, and secondly, devoting the entire Wednesday morning to the discussion of the practical aspects of everyday practice and the present sociological and political atmosphere gradually permeating medicine.

These various phases will be presented by noted authorities in their respective fields. I hope you will all be present to agree or disagree with their views. During that same morning we shall be honored with an address by the Honorable Elmer L. Andersen, Governor of Minnesota.

This is our 108th Annual Meeting and 108th year of meeting as independent physicians, who still enjoy the private practice of medicine. It is true that in certain areas the face of our profession has changed somewhat from that of the past due to insidious third-party infiltration. However, we are physicians who are still dictated to only by our consciences; by our Code of Ethics; by our insatiable thirst for scientific betterment; and last but not least, by our patients. Medicine has thrived under this form of dictation. Let's keep it that way.

C. L. Oppegaard

President, Minnesota State Medical Association

Editorials

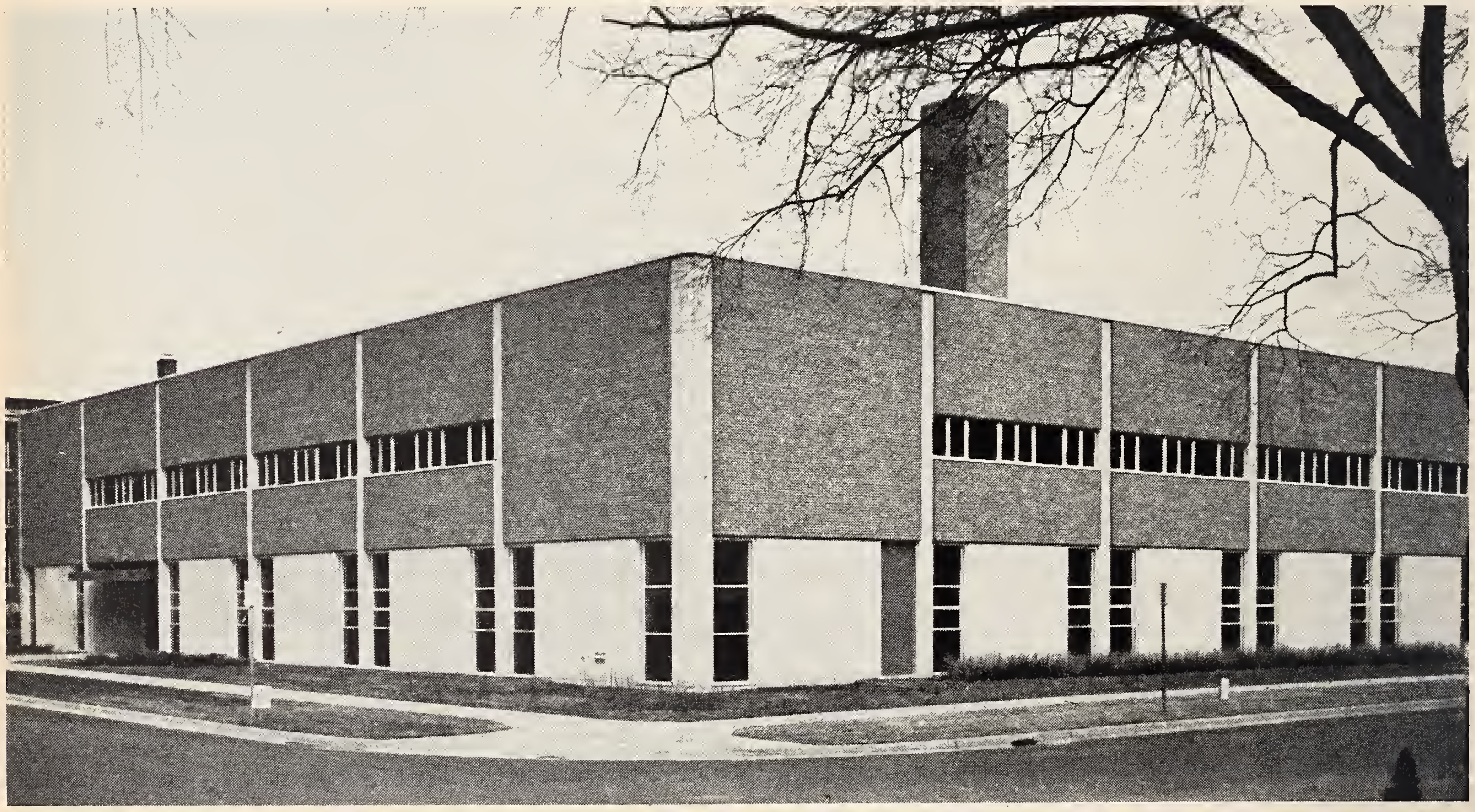
THE BIO-MEDICAL LIBRARY

The year 1961 is a milestone in the history of the Bio-Medical Library of the University of Minnesota. It marks the culmination of years of dreams, hopes, and planning. When students and faculty returned to classes at the beginning of winter quarter, they found for the first time truly adequate medical library facilities. In Diehl Hall the comprehensive collections of the library became readily accessible to all groups in the life sciences. At last, the library could assume its proper place in the educational program. For the Bio-Medical library is a rich storehouse of knowledge, providing inspiration and challenge for future advancements.

Diehl Hall itself is a multipurpose building of which two floors above the ground and a part of the basement are devoted to the library. It provides adequate space and attractive surroundings encouraging students and faculty to browse, to sample, and to study the wisdom and the lore recorded in the medical classics, the monographs, and journals.

A special feature of the new library is the open shelf arrangement of all materials. This eliminates the need to wait for delivery from a closed stack area and stimulates the curiosity of the reader by calling his attention to unknown titles. Current periodicals occupy a separate reading area for the individual who is interested in scanning the latest journals for new reports upon basic and clinical advancements. There is also a 24-hour study area which is always available to the serious student.

The total collections in the library number close to 150,000 volumes, one of the larger collections of bio-medical literature in the country. The growth of the library has been quite remarkable. Financial support, and thereby official recognition of the nucleus of the collec-



Diehl Hall, The new home of the Bio-medical Library.

tion, came on April 4, 1892, when the Executive Committee of the Board of Regents voted to allot $2,000.00 to the Medical Department for books. The next step was taken by the Medical School which initiated the process of consolidation of smaller private and departmental collections into a larger, more unified resource by incorporating the collections from pathology, medicine, anatomy, physiology, pharmacology, and the books at the hospital and the dispensary into a medical library. In 1912 the library committee of the Medical School proposed the consolidation of all the biological and medical collections on campus. That plan was opposed, however, by the executive faculty. Final consolidation had to wait until 1924.

The University completed construction of a new central library in 1924. It offered both an opportunity and the space to carry through the consolidation of the private, semi-private, and departmental collections in the life sciences that had developed as independent, autonomous libraries. The Medical School library, the Dental School library, and the libraries from the Departments of Botany and Animal Biology combined to provide 20,661 volumes that were moved into the new building as the Bio-Medical library.

Over the years the collections have grown in size and importance. This growth has been accelerated by the many friends who have made major contributions to the collections and thereby vastly broadened the research potential of the materials. Among notable gifts were the working library of Dr. Hess, the histologist, 8,400 books and pamphlets; the pediatric collection of Dr. Sedgwick, 500 volumes; the basic medical books belonging to Dr. Wheaton, 3,000 volumes; the history of ophthalmology collection of Dr. Burch, 170 volumes; and the collection of books on orchids of Mr. VanDusen, 80 volumes. In addition, the library has had a special friend in Dr. O. H. Wangensteen, who has been responsible for securing funds for the purchase of materials on the history of medicine: The Class of 1923 Fund, the Dr. George D. Eitel fund for surgical historical books, the Dr. Edgar T. Herrman fund for books on the history of cardiology, and the Mr. and Mrs. John Sargent Pillsbury fund for greater medicine historical books.

More than a generation ago, Dr. Harvey Cushing described the *Medical Career* in the following way: "Medicine, in short, becomes constantly more exact and scientific in its procedures. It is prompt to adopt for its own uses new knowledge of most varied kinds that comes from the chemist, the physicist, and the biologist, whose primary motive is the extension of knowledge and who admit little if any interest in the application of their discovery by the medical profession." These words are as true today as they were in 1928. They aptly summarize the need for a strong collection of literature, rich in the biological and medical sciences. The Bio-Medical Library qualifies as such a collection.

Vera M. Clauson,
Assistant Professor and Librarian

EMOTIONAL FACTORS IN CORONARY OCCLUSION

(Continued from March)

In the previous article, we considered briefly the history of the emotional aspects of coronary disease, and it was suggested that emotional factors have an effect on the recovery pattern of a patient with heart disease. Perhaps it is because of the organic tradition in medicine that not enough attention has been given to the role of the psyche in coronary disease. Resistance to the acceptance of the unconscious may lie in the fact that it seems to be more personal than scientific. But these resistances have some value for it places the psychological investigator in a position of demonstrating more clearly the role emotions play in heart disease, and of validating his experiences in the laboratory.

Both negative and positive emotions have been accurately shown to have a potent physiological effect on the cardio-vascular system. The laity speak of the face livid with rage, of blood running cold with terror, of the heart standing still in fear, and of the heart that bursts with joy. Recent studies have shown the part emotions can also play in lipid metabolism.

Early psychological studies were aimed at selecting persons most likely to have a coronary occlusion on the basis of personality profiles. Later studies, however, suggested that such profiles were not valid, and that the problem of evaluating the coronary personality was more complicated, even individualistic. Through psychological sophistication, we are becoming more keenly oriented toward appreciating the power of the unconscious mind, realizing that passive hositility, unrecognized by the patient, can be observed easily by the astute physician as being more damaging to the cardio-vascular system than an overt fit of anger. Indeed, over half of the coronary occlusions seen occur during rest and sleep — those twilgiht hours when daytime conflicts of anger, frustration, fear, etc. do not necessarily disappear. The unconscious never sleeps and may indeed exert even greater inner tensions during sleep or while resting. Examination of such patients by the psychoanalytically orientated investigator, skilled in working with acute coronary patients, have shown that resting or sleeping, are not synonymous with relaxing or peace of mind. Unconscious conflicts, resting during the day can push up at night; an example of this being a disturbing dream.

The majority of patients suffering an acute coronary condition are found to have had signs of gradual mounting tension for a long period of time, and this tension, existing for months or years grows steadily, frequently without recognition by the patient or those close to him. Why is it that in nearly every case we need to admonish the coronary patient not to smoke so much, to drink so much, to run so much, to eat so much? Why do we so frequently see in the patient with coronary disease an alteration of sexual expression, an increase or decrease of libido, impotence etc. What are excessive smoking, drinking, running, over-eating and altered sexual habits but attempts at release of mounting inner tension?

Important emotional correlation between the time of a heart attack and an important past emotional experience is validated in what is termed the "anniversary reaction." Here the heart attack occurs at a time which marks an anniversary of an emotional experience that was galvanic for the patient, through a complex, unconscious identification mechanism, involving a birth, death, separation or union with some significant person, either living or dead. This identification is usually highly charged with hostile feelings. Is it not more than coincidental that, in case history after case history, the heart attack should synchronize with the anniversary of a death of a parent, a birthday or wedding date?

This and other phenomena are complicated and require more extensive research. They are, however, not too complicated for the physician in charge to recognize—once he is educated or alerted to what to look for. Unfortunately, the tendency is to collect a multiplicity of physiologic data, exciting to the physician, but premature when attempts are made to make correlations between heart attacks and the personality structure of the person suffering the attack.

At this point, let me emphasize that the interview with an acute coronary patient may be a problem to the physician in charge. Probing, tapping and draining the patient's emotional life may call forth resistance from both the patient and his family ending their cooperation with treatment. Stirring up emotions unrelated to the heart attack can complicate the condition and further frighten the already frightened patient. The physician must approach the pyschic areas of his patient with knowledge and with confidence that he can handle any eruption of feeling that threatens to complicate the treatment. Frequently the psychiatrist remains aloof from such a situation, lest the very implications of his presence might pose a threat to the coronary patient's well being. Fears of precipitating another infarct or of being responsible for the sudden death of a disturbed coronary patient gives even the most temerarious psychiatrist pause . . . not to mention the castigation by his colleagues.

But the techniques of handling the unconscious can be taught. "Punch biopsy" of the unconscious can be a tool of all physicians. By punch biopsy we refer to that technique that can inform a doctor of the state of his patient's psyche, without endangering the status quo,—much as a surgeon can take a biopsy of a patient's liver in order to determine the pathology of that organ without performing major abdominal surgery.

Greater emphasis is now being focused on the psychology of recovery from a heart attack, delayed and normal. Patients are being encouraged to return to their former occupations, their normal way of living. Gradually the stigma of being a cardiac cripple is being overpowered by the attitude of acceptance through performance. More detailed studies of the emotional reactions to heart attacks are demonstrating that the label of being a cripple is also highly complex.

Following the life threatening blow, (a heart attack) the patient's psychological reactions are varied, depending on the severity of the illness, the personality structure of the patient, the amount of anxiety present and the defense mechanisms employed by the patient. Soon after the attack, the physician in charge should be able to predict, by observing certain behavorial phenomena in his patient, whether or not the patient is going to be an invalid psychologically or is going to make a normal recovery from his heart attack. By applying such observations to the substance of his treatment, post-coronary invalidism can become a rare complication, rather than the common one it is now.

The brief time taken by an understanding physician to sit, to listen and to talk to his coronary patient will save countless hours that might be lost in futilely struggling to rehabilitate a cardiac neurotic who remains an invalid in order to meet his unconscious needs.

It is through prevention that the physician can be most highly effective.

(To be continued)

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Reference: Emotional Factors in Coronary Occlusion—A Research Study by Department of Medicine and Psychiatry, Temple University Hospital and Medical School. Doctors Weiss, Edward (deceased), Dlin, B., Fischer, H. K., Winters, Wm., Hagner, S., and Russell, G.

EAT AND RUN

Mankind has always been fascinated by the effects, real or imagined, of the diet on health, appearance, energy, and even on the emotions, including the tender passions. After all, our bodies are made from what we eat, considerably transformed, fortunately, and there is a real basis for Ludwig Feuerbach's famous dictum, "Der Mensch ist was er isst," (Man is what he eats).

As we pointed out in our recent book "Eat Well and Stay Well" (Doubleday and Co.), athletes are particularly concerned about how and what and when they eat and they are prone to develop weird and wonderful theories on the subject. Perhaps one no longer believes in the primitive idea that the attributes of the food source are transferred to the eater; no one insists that we will grow strong if we eat the meat of strong animals or fierce if we drink tiger's blood. But the residues of such notions linger on in superstitions about the virtues of red meat, "natural" foods, and the like.

More sophisticated, superficially, are many current beliefs about the benefits of stoking up on extra vitamines and minerals, "quick energy" from glucose, great quantities of dairy products at all ages, and the more protein the better. Athletes generally believe they should not eat for three or more hours before competition in order to avoid conflicting physiological demands on the circulation. De-bunking of such concepts is difficult in the presence of commercial propaganda and the folklore of coaches and the paucity of truly scientific studies on man under controlled conditions.

For some years Prof. W. W. Tuttle and associates at the University of Iowa have been studying physical performance in relation to meals. Their latest report (Scholastic Coach, Nov. 1960) shows that performance of young men in the 100-yard dash is substantially the same whether they eat a standard meal (507 calories) at any time from thirty minutes to three hours before the race. This is not a world-shaking finding but is an example of elementary scientific analysis of an old belief. Now I wish someone would find out how long my children have to wait after lunch before they may go swimming.

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THE IMPORTANCE OF ART IN THE ART OF LIVING

The doer and the viewer in art . . . the viewer and the doer . . . and the doer and the viewer . . . and the viewer and the doer. No, there is nothing wrong with the press, nor is this a typographical error. This is just the way art is — an eternal example of the law of action and reaction, or of creation and re-creation — an endless string of pearls, if we understand; first one of creation, then one of appreciation. These are the very same pearls that are not to be thrown to swine.

Seeing, I believe, is superior to all other senses in conveying messages to the brain. Perhaps this point could be argued by some in the medical profession but all would agree that seeing is eminently important.

The eyes of a child open early to take in the wonders of the universe. They focus on the stars, millions of light years away. The seasons pass in front of them. Coupled with the brain the eyes are tremendous tools. They serve the brain constantly in a physical way but they also can serve in a spiritual way. The visual arts are visible manifestations of the spiritual life of highly trained artisans and, as such, should be worthy of every knowing person's attention. One of life's verities to which I cling is that man does not live by bread alone. President John Adams once said, "I study the art of war, so my sons can study the arts of law and medicine, so their sons can study art and poetry."

I think the time has come to consider these points very carefully as we reach the days of more and more leisure. Medicine is providing more of us with longer life spans. Science through automation is shortening our working day. Where many once lived like John Adams, barely finding time to fulfill the starkest demands of an all too short lifetime, today, most of us could stroll, if not saunter toward the grave. Many of us, however, at the same time are not always aware of the possibilities of a richer appreciation of life. Perhaps one problem is that we have not yet learned how to make use of a new, slower tempo within a speeded up society.

Is it the quality of modern life itself that lacks savor, or is it ourselves who lack awareness of the things to be tasted, such as art, which runs through our lives like wool through a cloth?

How can we sharpen this awareness???

There has been a tremendous growth of amateur art in America. This fact is perhaps dramatized by the annual art shows at your larger medical meetings where physicians contribute as doers. This is all very good, but, where we fall short is in the development of the discriminating and critical viewer.

The importance of the appreciator is seldom realized. We might ask ourselves this question. "Would Praxiteles or Phidias have been as great without Pericles — Leonardo and Michelangelo without Lorenzo — even Socrates without Plato?" I think not. The team of creator and appreciator is necessary for the full bloom of any art.

In conclusion, I would like to quote Confucius who said, "When the archer misses his mark he examines himself." It might be that we should examine what we are doing visually to our surroundings, including such areas as our homes, offices, and hospitals, to see whether we break the chain of the creator and appreciator and thereby miss something of the art of living.

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PRESENTATION TO PUBLICATION

Only a third of all authors presenting papers at medical meetings submit them for publication within six months, while the delay between journal acceptance and publication averages six months more. A research study covering the fate of hundreds of papers at two large meetings indicated that less than 60 percent were published within two years of presentation.

Medical Economics

Edited by the
Committee on Medical Economics
Minnesota State Medical Association
GEORGE EARL. M.D., Chairman

MINNESOTA SURVEY SHOWS AGED CAN PAY MEDICAL BILLS

The costs of medical care for hospitalized patients over the age of sixty-five were recently surveyed in the Renville County Hospital in Olivia, Minnesota. The study was conducted in this typical community general hospital of forty-one beds and ten bassinets for the year 1960 with the cooperation of the Hospital Administrator and Medical Staff. The majority of the patients treated in the hospital are residents of Renville County in West Central Minnesota.

The survey showed that a total of 256 patients over the age of sixty-five were admitted to the Renville County Hospital in 1960. There were 350 hospital admissions for patients over the age of sixty-five during 1960. This figure was 21.5% of the total of 1,630 admissions recorded for the year.

Multiple hospital admissions for this age group were sixty-three or 24.6% of the patients. Of this number, one patient had eight admissions, two patients had five admissions each; nine patients had three admissions each and forty-six patients had two admissions each.

Fifty-two or 14.8% were "surgical" admissions and 298 or 85.2% were "medical" admissions. Patients with at least one surgical admission totalled forty-seven.

The patient's age range was as follows: mode, sixty-five years; median, seventy-four years and the mean, seventy-five years.

The patient's total hospital bills were as follows: mode, $36.00; median, $226.00 and mean, $350.54.

Figures used here were the total hospital bills rendered a given patient in 1960, regardless of his number of hospital admissions.

The tabulations listed in the accompanying table show that 75% of the patients used private resources to pay their bills, 25% being paid by government agency. Eighty-four patients, or 33% of the group, had some insurance coverage to aid payment.

Fifty-five or 21.4% of the patients had hospital bills larger than $500.00, 7.4% (nineteen patients) being over $1,000.00.

As of February 1, 1961, just twenty-three, or 8.9%, of the patients had not paid their hospital bills in full. Only seven of these (2.7% of the whole) had made no payment on account, the remainder made some payment.

Physicians' bills were as follows: mode, $30.00; median, $56.00 and mean, $105.69. Each patient's physician (seven physicians) was contacted and the total charges for illnesses treated in the hospital during 1960 was requested.

Only 1.6%, or four patients had physicians' bills over $500.00. 9.1%, or twenty-two patients had physicians' bills over $300.00. As of February 1, 1961, 15.7% or thirty-eight patients were known to have some of the physicians' bill unpaid.

It was found that just 9.6% of the total hospital-physician bills rendered these patients for care during 1960 in these illnesses remained unpaid as of February 1, 1961.

According to Dr. J. A. Cosgriff of the Medical Staff of Renville County Hospital, a comparison can be drawn between this data and that previously published by the Tarrant County Medical Society of Texas, as contrasted with undocumented figures circulated by Senator Clinton Anderson and others. The latter have stated that the average cost per illness to the elderly is $1,000—$450.00 hospital bill and $550.00 doctor bill.

Compare:

	Hosp.	Phys.	Total
Senator Anderson's figures (per illness)	$450.00	$550.00	$1,000.00
Tarrant County, Texas (per illness)	$384.51	$114.62	$ 499.13
Renville County, Minn. (per 1960)	$350.54	$105.69	$ 456.23

Dr. Cosgriff points out that the data assembled in this survey warrant our agreeing with the members of the Tarrant County Medical Society that "Senator Anderson's figures are fantastic." It is demonstrable that hospital costs far exceed physician costs. But more important, these data provide evidence that 75% of those patients over age sixty-five in our community *are* able to pay for their medical costs from private resources, and all the others are already adequately assisted by welfare agencies.

There is no unmet need which requires the passage of new Federal legislation to pay for health care in our community. There is no warrant here to pass legislation which would compel the workers of America, through increased Social Security taxes, to pay the medical costs for the 75% of those over sixty-five who are already able to pay their own costs adequately.

TABULATION OF THE PAYERS OF HOSPITAL COSTS FOR THE 256 PATIENTS OVER 65 YEARS OF AGE ADMITTED TO THE RENVILLE COUNTY HOSPITAL, OLIVIA, MINNESOTA, FROM JANUARY 1, 1960, THROUGH DECEMBER 31, 1960

Patient Age Group	Number of Pts. Hospitalized	Number of Hosp. Admissions	Costs Paid By Self	Insurance Aid	Govt. Agency
65	18	24		11	1
66	10	14	6	6	1
67	18	25	3	7	1
68	8	11	10	2	2
69	14	16	4	7	3
70	15	18	4	4	3
71	15	21	8	5	2
72	12	14	8	5	3
73	13	22	4	7	2
74	11	17	4	1	3
75	13	21	7	6	4
76	15	19	3	6	4
77	13	14	5	6	2
78	12	16	5		7
79	7	10	5	2	1
80	7	11	4	2	3
81	9	13	2	2	6
82	7	13	1	1	2
83	7	6	4	3	2
84	4	5	2	1	1
85	4	4	2		4
86	5	5			2
87	6	11	3		
88	4	5	6		2
89	3	5	2		1
90	3	4	2		1
91	1	4	2		
92	1	1	1		
99	1	1	1		1
	256	350	108 (42%)	84 (33)%	64 (25%)

These 256 patients over age sixty-five accounted for a total of 350 separate hospital admissions during the year, and thus comprised 21.5% of the total (1,630) hospital admissions during 1960.

Seventy-five percent of these patients paid their bills through private resources, forty-two percent paying their entire bill themselves, and another thirty-three percent having partial or full assistance from their private insurance in paying costs. The remainder, twenty-five percent, had their hospital bills paid by government agencies (sixty-two paid by welfare boards, and two by Veterans Administration).

SURVEY GIVES PROFILE OF MINNESOTA SENIOR CITIZENS

A Minnesota senior citizens survey was conducted in 1960 to ascertain the self-appraisal of persons in this age group.

Members of the professional survey team included Marvin J. Taves, Associate Professor of Sociology, University of Minnesota; Bernard E. Nash, Special Consultant on Aging for the State of Minnesota and Gary D. Hansen, Research Assistant in Sociology, University of Minnesota. Interviews were completed by local chapters of the American Association of University Women.

The survey was conducted in three categories, namely in the three metropolitan areas including Minneapolis, St. Paul and Duluth; in eleven urban areas ranging in population from 2,500 to 28,500 and in Minnesota farming communities.

Because only persons in rural areas who received Social Security benefits were interviewed, this phase of the survey strongly reflcts the income from this source.

Approximately one-third of these persons were in the sixty year range, one-third in the seventy age range, and the remainder in the eighty and ninety age range. The respondents who resided in contregate housing tended to be older than those living in their own homes or with relatives. Relatively few of the respondents living in homes for the aged or nursing homes were under seventy years of age, one-half of this group were over eighty. The following are some of the interesting highlights of the survey:

Approximately fifty percent of the respondents reported their net worth was less than $10,000. About forty percent of the non-contregated group reported a net worth of $10,000 or less, and the contregated group and fourteen percent of the rural group fell in this category. About nine percent of the non-contregated group, three percent of the contregated group and fifteen percent of the rural group reported that they had a net worth of $50,000 or more. Only about ten percent reported a net worth which would allow a minimum subsistence income from an investment of assets. A large majority was found to be dependent upon other sources of current income.

Current income came from many different sources. Most of the rural respondents fell into the category of non-contregated group. Of the non-contregated group, forty-four percent said they were receiving Social Security as current income. On the other hand, of the contregated group, thirty-nine percent listed Old Age Assistance as current income. Other sources mentioned in order of frequency by the non-contregate group were pensions twenty-eight percent, worked twenty-six percent, investments twenty-three percent, savings twenty-three percent, insurance thirteen percent, children and relatives ten percent, Old Age Assistance ten percent and others five percent. Among the contregated respondents, Old Age Assistance and Social Security were listed by a total of sixty-three percent; children and relatives twelve percent and other sources less frequently. More than twice as many listed Social Security and Old Age Assistance than any other category.

The respondents were asked if they considered themselves in excellent, good, fair or poor health. The following answers apply to only those who lived in the urban and metropolitan area. About fifty-five percent of those people said that they were in excellent or good health. About forty percent said that they were in poor health. The remainder did not know.

When these persons were asked what medical care they had not properly received, approximately eighty-seven percent stated they had no uncared for medical needs. Of those who said they had an uncared for medical need, the reason given by forty percent was that it was too expensive. Another twenty percent said that their need was incurable or nearly so. About sixty-five percent of those interviewed stated that they had seen a doctor for one reason or another during the past year. Another fifteen percent reported no contact with their doctor. People who said they had no contact with the hospital averaged about forty percent, and the other sixty percent said they had been in the hospital for some reason or another during the year.

Of total dollars spent last year for health care by the persons interviewed, approximately twenty-five percent spent between $0-$49. About fifty percent spent between $0-$200 for medical care.

When the respondents were asked whether they favored hospitalization coverage under the Social Security tax approximately sixty-two percent of those in the urban area and seventy-two percent of those in the metropolitan area expressed their approval. Only twenty-eight percent in the urban area and nineteen percent in the metropolitan area were opposed to coverage under the Social Security program.

The respondents were asked how many carried hospital insurance. Over forty percent of those in the urban area and twenty-nine percent of those in the metropolitan area had no hospital insurance. The majority of those who have insurance bought their insurance after age fifty.

Medical and surgical insurance was owned by less than fifty percent of the respondents. The study pointed out that fifty-one percent of those living in urban areas and forty-seven percent of those living in metropolitan areas, did not have medical or surgical insurance. The study also showed as was the case in hospital insurance, most persons who now have medical and surgical insurance bought that insurance after age fifty.

When asked if the services of the Public Health Nurse was available in their community, about fifty-five percent answered yes. Over thirty percent did not know. About eighty-four percent stated they never, rarely or seldom used the public health nurse. About fifty-six percent of the respondents in the urban and metropolitan area stated they would use the services of the public health nurse. About twenty- five percent said they would not and the remainder didn't know.

The respondents were asked if medical care was available when they could not afford to pay. In the urban area, sixty-four percent of the respondents said yes while twenty-five percent did not know. In the metropolitan area, seventy-three percent said yes and twenty percent did not know. Ten percent said they had used such services within the past six months. Seventy-six percent in the urban area and seventy-one percent in the metropolitan area said they never, rarely or seldom use the above described services. About fifty-three percent of the persons interviewed stated that they would use non-pay medical care if it was available; whereas about twenty-eight percent said they would not and the rest were undecided.

The respondents were asked what their first wish would be. About twenty-seven percent stated they would like "good health or assurance of medical protection, hear better." Other "first wishes" were: fourteen percent, didn't know; eleven percent, no change or no wish; eleven percent, more money or greater Social Security payments; nine percent, travel; six percent, companionship; four percent, do some work.

About seventy percent of the respondents stated that they and their spouse required between $100 — $200 a month on which to live. Fewer dollars were needed by persons who lived in a more rural area.

The community activity and service desired by most respondents follows: The non-contregated group both metropolitan and urban wanted visiting programs, free or low-priced health clinics, card games and social organization or recreation clubs. Each of these was listed by at least one-third of the non-contregated group. Items mentioned by one-third of the contregate group were: visiting programs, free or low-priced health clinics and movies. About fifty percent of all the respondents said they desired and would participate in free or low priced health centers.

Two thirds of the persons surveyed had no financial plans before age sixty-five for life after sixty-five. Failure to plan was found to be more characteristic of persons living in the rural than in urban or metropolitan areas. Failure to plan was also found to be more characteristic among the non-contregated than the contregated groups. Despite this inadequate planning, forty-nine percent reported having enough money in order to live comfortable, thirty-five percent had enough to "just get by" and sixteen percent did not have enough money to live on.

Nearly fifty-three percent of the respondents objected to the establishment of a mandatory retirement age, but at the same time, fifty-four percent suggested that a flexible retirement age policy be established. About one-half desired labor and management to help employees with both pre and post retirement problems in planning.

Lack of work or loss of feeling of responsibility was listed by most of the recipients as the most difficult adjustment after retirement. Three-fourths of the farm sample and one-third of both urban and metropolitan sample reflected the feeling of "being put on the shelf."

The non-contregate person was found to have less difficulty in using time to good advantage than the contregated person. The non-contregated respondents stated that they used their time working around the house, following hobbies, participating in social activities, and in volunteer work, or doing things they always wanted to do but until now did not have the time. On the other hand the contregated residents more frequently reported increases in just sitting and thinking. When both groups were combined, the largest portion of time was used in working around the house, listening to radio or television, just sitting around and thinking, or doing things they have always wanted to do.

PR

Carl H. Woyke
Editor

1961 IS A YEAR OF MD PUBLIC RELATIONS CHALLENGE

Is the medical profession equal to the demands facing it in 1961? This is the paramount question which individual doctors and medical societies must ask themselves during the course of the year.

The rise of support for government medicine need not continue if every member of the medical profession is willing to demonstrate to the public that our present system of medical care is the best in the world. This can be accomplished only if the profession, individually and collectively through its medical societies, makes a greater effort to provide adequate health care for every American regardless of his financial status and assumes leadership in helping to solve important medical and health problems facing our nation in such areas as medical care for the aged, medical costs, medical recruitment and others.

Here are the priority projects for 1961 which should top the PR agenda of every doctor and county medical society.

Help For Those Who Need Help

Although Forand-type legislation was starved off temporarily last year with the passage of the Kerr-Mills medical assistance plan to help the aged at the state and county level, the election of a new Democratic Congress and administration favoring the Forand approach signals the beginning of another drive early this year for passage of a medical care program for the aged tied to the social security program. Doctors recognize that some persons over sixty-five have serious problems in financing medical care and have gone on record favoring help for those who need help. But physicians do not believe that a compulsory program of medical assistance is the answer, particularly since the majority of those over sixty-five neither need nor want federal assistance in financing their medical care. It is therefore imperative that doctor and society take immediate action to help implement the Kerr-Mills plan, and see that it is made to operate at maximum efficiency.

Fight Against Government Medicine

During 1961 organized medicine will continue its battle in Congress against compulsory health schemes. But if it is to win this battle, doctors at the local level have a long-range job on their hands—re-establishing a public awareness of the values of personal action in solving community problems as a keystone of our democratic system, instead of passing such problems along to the federal government for solution. Every opportunity must be utilized to reach the general public with the facts of government medicine. People must be made to realize that they themselves are the government and must ultimately pay for every "benefit" they receive—generally paying more when government provides the service than if they buy it themselves.

There are many opportunities for Minnesota doctors to get their message before the public. One excellent opportunity is offered within the framework of the 1961 college debate topic: "Should the U.S. adopt a system of compulsory health insurance for all citizens?" Doctors individually and medical societies collectively should make sure every debater receives a copy of the kit prepared by the A.M.A. expressing medicine's views on socialized medicine and, when the occasion permits, air their thoughts forcefully to students. Perhaps your county society might arrange to invite debate teams to present arguments before the entire membership—an enlightening experience for all concerned. Write your Minnesota State Medical Association State office for these debate kits.

Medical Costs

Complaints about medical costs today provide the basis for most arguments advanced against our present system of medical care. Unfortunately, the physician is usually the scapegoat when people complain that medical costs are rising. Even though the physician now receives a smaller share of the nation's medical dollar than ever before, people consider him partly to blame for other health costs, such as hospital, drug and other bills. The doctor, therefore, has a tremendous educational job to do in explaining the true medical cost picture to the public. He must point up the fact that today's health dollar buys the highest quality medical care in the world despite inflationary increases.

Doctors should also alert the public to the A.M.A.'s current intensive study of the whole problem of medical costs in an effort to guide the public in spending its health dollars more wisely and to provide a higher quality of health care at lower cost. The individual physician should be encouraged to explain medical costs to his patients while discussing medical fees with them so that the patient knows what he is getting for his health dollar. Medical societies will be interested in A.M.A.'s clever new cartoon-style booklet entitled, "The ? Cost of Medical Care" to implement their medical cost programs.

Medical Recruitment

One of medicine's major concerns today is the possibility of a future shortage of physicians due to an expanding rate of population growth, as well as increasing competition for science talent in other fields. To meet the problem the A.M.A. is currently conducting an intensive nationwide campaign to attract top students to the study of medicine and is organizing a national scholarship and loan program for talented students who are unable to finance a medical education. To meet the problem at the local level medical societies are urged to sponsor their own scholarship programs and to step up medical recruitment activities by organizing such programs as future doctors' clubs in their communities and setting up health careers conferences for high school students on an annual basis. The A.M.A.'s film "I Am A Doctor" and the 1960 Medical Careers kit containing a give-away leaflet on career opportunities for teenagers, a guidance booklet for school counselors, and speech outlines for medical career teams visiting schools, will offer valuable assistance in shaping your medical careers program.

Doctor-Patient Relations

Since the doctor-patient relationship is the keystone of our whole system of private medicine, societies should conduct a continuing educational campaign among the profession and public to improve this vital relationship. New society members particularly should be alerted to ways to prevent breakdowns in this relationship at orientation sessions devoted to the subject, with special emphasis given to such topics as efficient business practices and advance fee discussions as means of forestalling future differences with patients. Old members too should not lose sight of the fact that the preservation of our present system of medicine depends on good doctor-patient relations.

Minnesota Blue Shield

Minnesota Blue Shield is launching a special non-group enrollment drive aimed at filling the gap in medical-care coverage in rural areas. The drive will be directed mainly at farmers, although special efforts will also be made to enroll other self-employed persons and senior citizens.

A recent survey of the Department of Health, Education and Welfare reveals that while 66 percent of urban dwellers have some type of medical-surgical coverage, only 40 percent of the farm population has such protection. Furthermore, only 12 percent of the farm population have coverage for visits to the doctor's office, such as the diagnostic x-ray and laboratory benefits provided by Blue Shield contracts. It is significant that although farm workers have less extensive medical coverage, their needs—particularly for out-patient x-ray and laboratory diagnostic services—are greater than city dwellers, who for the most part are salaried workers or are covered by workmen's compensation.

The special needs of farmers stem from the somewhat hazardous aspects of the occupation, as well as the heavy burden which hospitalization often places on the farm family. When the head of a farm family is unable to work, the farm operation may come to a standstill. Usually there is no one to replace him or pay his salary. Even a brief period of hospitalization can be a serious financial catastrophe.

Blue Shield's diagnostic benefits are designed to help the subscriber stay well and stay out of the hospital. They encourage early diagnosis and help reduce the cause of lengthy, expensive hospitalization. Diagnostic benefits also reduce the patient's tendency to postpone needed medical care until he enters a hospital. The knowledge that x-ray and laboratory services in the diagnosis and treatment of an illness or injury will be covered without hospital confinement, encourage the patient to obtain medical care while he is still up and about.

During the drive subscribers will also be enrolled in the Blue Shield Senior Citizen Plan, which is now open throughout the year. The plan offers Blue Shield medical-surgical-diagnostic benefits to persons 65 and over at a cost of $2.95 per month. This coverage is available without a physical examination.

Blue Shield's non-group membership drive will focus on the principal trading centers of the state. Representatives of the Blue Shield division of Enrollment and Service will set up membership headquarters in trade centers for periods of one, two or three days. Newspaper advertisements and other informational media will be used to announce the drive and invite prospective members from surrounding areas to visit the enrollment headquarters and apply for Blue Shield coverage.

Doctors are urged to support the enrollment program by reminding patients that Blue Shield coverage is available on a non-group basis. Patients who are 65 or over should be told of the opportunity to obtain inexpensive Blue Shield protection under the Senior Citizen Plan.

The forthcoming non-group enrollment program is an important step toward fulfiling the mission of Minnesota Blue Shield. The enabling act which established the plan states as its function: "To make possible a wider and more timely availability of medical care, thereby advancing the public health and the science and art of medicine in this state."

Minnesota Blue Shield has always sought broad community coverage. Its new campaign to increase medical-care protection among farmers and self-employed persons is a proper expansion of its role as the provider of realistic medical-care coverage, at a reasonable cost, to all members of the community.

Medical Examiners

88-YEAR-OLD QUACK DOCTOR JAILED

Re: State of Minnesota-vs-Edward Coates, alias Edward Coats, alias Edward Mayr, alias Edward Hall, alias Edward La Rue.

On February 1st, 1961 the above named defendant, 88, 1316 Payne Avenue, St. Paul, was sentenced by the Hon. John W. Graff, Judge of the District Court of Ramsey County, to serve a term of four months in the workhouse for a violation of the basic science law. Immediately prior to being sentenced the defendant had entered a plea of guilty to information alleging that on or about May 3rd, 1960 he wrongfully, unlawfully and willfully represented that he was Dr. Edward Coates, a doctor of medicine, and did in his assumed capacity as a doctor of medicine diagnose a patient's condition as being the start of diabetes and prescribed and sold a bottle containing a certain powder for the purpose of treating the diabetic condition. After serving the above sentence Coates will be taken into custody by the United States Marshall who holds a warrant for the defendant's arrest obtained by the United States Board of Parole on December 19th, 1960. On September 10th, 1956, Coates was sentenced by Judge Ewing T. Kerr in Federal District Court at Cheyenne, Wyoming to a term of five years in prison for transporting forged securities in interstate commerce. The defendant was transferred from the prison at Leavenworth, Kansas to the Federal Correctional Institution at Seagoville, Texas and on January 23rd, 1960 he was relased from that institution on probation to the Minnesota district for supervision.

On November 29th, 1960 a representative of the Minnesota Board of Medical Examiners signed a criminal complaint against the defendant when it was learned that he had sold a bottle of powder to a St. Paul woman for $16.30, after she had told him that she craved starchy foods and he diagnosed her condition as "the start of diabetes." Coates could not be located immediately, however, but on the following day he was arrested with the aid of an anonymous telephone call. During the course of the investigation it was learned that the defendant, after representing to be a doctor, had offered his services to a St. Paul bartender to go to the hospital and "look after" his daughter, a premature baby, who was under the care of a physician.

The defendant has a long criminal record under various names dating back to February 23rd, 1916 when he was first arrested in Toledo, Ohio on a charge of forgery, being sentenced on that occasion to the Ohio State Prison. In November 1923 he was sent to Michigan State Prison at Jackson, Michigan after he was convicted of larceny. On August 15, 1931, under the name of Edward Hall, the defendant was sentenced at St. Paul to a one-year term in the State Prison at Stillwater for forgery. In the spring of 1935 the defendant passed forged checks in St. Paul by posing as "Dr. Edward Coats," departing from the state before he could be apprehended. However, he was sentenced under the name of Edward La Rue on October 3rd, 1935 at Wichita, Kansas to serve three years in the Federal Penitentiary at Leavenworth on a forgery charge. At the time of his arrest narcotic drugs were found on the person of the defendant.

On August 4th, 1938 the defendant was sentenced at Lansing, Kansas to a term of from one to five years for embezzlement and in 1943 after being arrested on an auto theft charge the defendant was sent to the United States Public Health Service Hospital at Lexington, Kentucky for treatment for drug addiction. On March 1st, 1945 under the name of Edward Mayr the defendant forfeited $500 bail in St. Paul Municipal Court after he failed to appear in court for trial on a charge of obtaining narcotics by misrepresentation. He was alleged in the complaint to have obtained narcotic drugs from four St. Paul doctors by representing himself as being ill and in great pain. At that time he was being sought by the Federal authorities for escaping from the institution at Lexington, Kentucky on June 25th, 1944 and also for illegal possession of an army uniform. The defendant has no training in medicine and holds no license to practice any form of healing in the State of Minnesota.

"COUNSELOR" GIVEN 90 DAY TERM

Re: State of Minnesota-vs-Richard James Johnston

On December 13th, 1960 Richard James Johnston, 46, Deephaven, Minnesota was sentenced by the Hon. Earl J. Lyons, Judge of the District Court of Hennepin County, to serve a term of 90 days in the Minneapolis Workhouse, the defendant having been found guilty by a jury on November 17th, 1960 of the crime of false advertising. Judge Lyons then stayed the execution of the sentence in order to permit the defendant to appeal and on January 23rd, 1961 Johnston served notice of appeal.

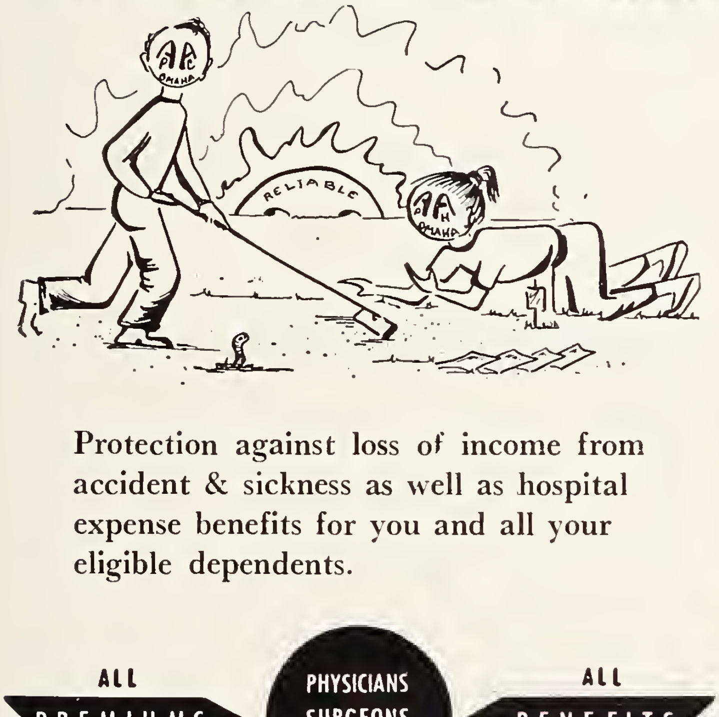
Following an investigation by the Minnesota State Board of Medical Examiners and the Hennepin County Sheriff's office, Johnston was indicted on June 21st, 1960 by the Grand Jury of Hennepin County, the indictment alleging that he had inserted an advertisement in the "yellow pages" of the Minneapolis Telephone Directory under the heading "AMERICAN FAMILY LIFE CENTER" reading as follows: "Chartered & Financed by the Church of the Father — A Religious Non-Profit Organzation, Inc. in Minn. Personality Testing — Counseling in Juvenile Problems — Pre-Marriage — Marriage — Post-Marriage, Obesity, Alcoholism, & Other Habit Problems. Our Staff-Ordained & Credentials Registered. Member Adult Education Assn. National Assn. of Hypnotists. Two Doors from Deephaven Beauty Salon." The indictment also alleged that the said services offered, whether medical, diagnostic or psychological, testing or counseling were not possible of performance by the defendant as he was not qualified by medical training or otherwise, to render the services to the public.

The evidence at the trial disclosed that Johnston, a self-styled minister who claimed to have founded the "Church of The Father," charged a St. Louis Park woman $40 for four hours of consultation after informing her that her husband was not an alcoholic, as she had believed, but that he was a diabetic. She testified at the trial that Johnston told her he was a "messiah" who had come to save all people. The witness also revealed that during a consultation the defendant asked her if she made her husband jealous by "throwing her hips from side to side." Two residents of Minneapolis then testified that they had seven counseling sessions with Johnston and that he was paid $35 for his services. A representative of the Minnesota State Board of Medical Examiners was sworn in as a witness whereupon he quoted from an interview with the defendant in which Johnston said that he did not practice medicine but did counsel persons on problems relating to alcoholism and overweight, which he treated by hypnosis. Dr. John B. Cardle, a resident at Minneapolis General Hospital, also gave testimony on behalf of the prosecution, stating the he regarded overweight as a disease and therefore a proper field of medical science. When undergoing cross-examination, Dr. Cardle said it was his opinion that a physician or a psychiatrist is more capable of properly advising an alcoholic than a lay counselor who also happens to be an alcoholic.

When testifying in his own behalf concerning his background in religion Johnston said that while he was in the Azores doing construction work in 1944 on December 15th of that year while he was kneeling at his bed praying a bright light engulfed him and a voice told him: "My son, hear ye these revelations." According to the defendant, he seemed to be lifted up above the mountains and the voice told him about the lost continent of Atlantis and the Atlantian era. Johnston added that he enrolled in a correspondence school, the College of Divine Metaphysics, from which he obtained a doctor of psychology degree at the end of ten years of study. However, evidence was introduced on behalf of the state that a doctor's degree could be secured from the College of Divine Metaphysics, Indianapolis, Indiana within a period of 30 weeks for a fee of $125 or less. The jury deliberated for one hour and ten minutes before finding the defendant guilty.

The defendant has a previous criminal record, having been convicted on September 21st, 1935 in the District Court of Hennepin County of the crime of grand larceny in the first degree, at which time he was sentenced to serve a reformatory term of not less than one year and not more than ten years. Johnston has no training in medicine and holds no license to practice any form of healing in the State of Minnesota.

Minnesota State Board of Medical Examiners
J. P. Medelman, M.D., Secretary



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[1] *Jorres, S. M.: Unpublished test report from Pratt Diagnostic Clinic, New England Medical Center, Boston, Mass. (July, 1958)*

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In Memoriam

ALBERT E. AHRENS

Dr. Albert E. Ahrens, a physician in St. Paul for fifty years, died in the Bethesda Infirmary in St. Paul on February 18, 1961. He was eighty-three years of age.

Dr. Ahrens was born in Adams, Minnesota in 1877. He obtained his preliminary education in the Adams High School. He was a 1904 graduate of the Hahnemann Medical College in Chicago. He interned for one year at Hahnemann Hospital in Chicago and did post-graduate work at Vienna, Austria in 1910. He started his practice in St. Paul in 1905 and was on the Ancker Hospital surgical staff from 1908 to 1942.

Dr. Ahrens was a charter member of the St. Paul Athletic Club and a member of Summit Lodge 163, AF & AM for fifty years. He retired from active practice in 1958.

He was also a member of the Ramsey County Medical Society and the American Medical Association. Dr. Ahrens was granted Life membership in the Minnesota State Medical Association in 1953 and Fifty-club membership in 1954.

Surviving are his wife, Constance E.; two daughters, Mrs. W. D. Beatty, St. Paul and Mrs. Robert E. Carter, Iowa City, Iowa; and two sons, Dr Robert M., St. Paul and Albert E. Jr., White Bear Lake. There are five grandchildren.

* * *

GEORGE D. HAGGARD

Dr. George D. Haggard, Minnesota's oldest physician and resident of Minneapolis, died February 25, 1961. He was 104 years of age.

Doctor Haggard was born in a log cabin near West Concord, Minnesota, in 1857, the year before Minnesota became a State. His mother was an unlicensed doctor and midwife. He obtained his preliminary education at the Eau Claire, Wisconsin, High School and at Oskaloose College, the forerunner of Drake University at Des Moines, Iowa. He was the last survivor of his class and Drake's oldest alumnus. He obtained his medical education at the University of Minnesota Medical School in 1893 and interned for one year at General Hospital in Minneapolis.

He worked as assistant city health officer to combat epidemics of typhoid and scarlet fever and for sanitation codes to prevent them. At the turn of the century, Dr. Haggard was the Prohibition Party candidate for Governor of Minnesota.

Dr. Haggard was a member of the staff at Asbury and Northwestern Hospitals in Minneapolis. He was president of the Hennepin County Medical Society in 1913. He was a member of the American Medical Association and was granted Life membership in the Minnesota State Medical Association and was also a Fifty-club member. Dr. Haggard retired from active practice in 1953 at the age of ninety-six.

Survivors include his daughter, Mildreth, Minneapolis, and a sister, Mrs. Mattie Semones, Seattle, Washington

* * *

HERBERT H. LEIBOLD

Dr. Herbert H. Leibold, Parkers Prairie physician for more than fifty years, died February 3, 1961. He was seventy-seven years of age.

Dr. Leibold was born in New Ulm, Minnesota in 1883. He obtained his preliminary education at the New Ulm High School. His medical education was obtained at the Minneapolis School of Physicians and Surgeons and Jefferson Medical College, Philadelphia. He began practice in Parkers Prairie on October 1, 1909.

Dr. Leibold was greatly interested in hunting and fishing in addition to his medical practice. He had a sincere interest in his community.

He was a member of the Park Region County Medical Society and the American Medical Association. He was granted Fifty-club and Life membership in the Minnesota State Medical Association 1959.

Survivors include his wife, Amelia, two brothers, Frank, St. Joseph, Missouri, and Edwin of Shakopee and one sister, Mrs. Linda Nelson of Springdale, Arkansas.

* * *

WILLIAM LERCHE

Dr. William Lerche, Star Route, Cable, Wisconsin, died January 25, 1961. He was ninety-four years of age.

Dr. Lerche was born in Larvik, Norway in 1867. A graduate pharmacist of the University of Oslo in 1887, he graduated from the University of Illinois Medical School in 1897. In 1899, he graduated from Surgery College in Berlin, Germany and attended Surgeons College in Vienna in 1909.

He was associate professor of surgery at the University of Minnesota from 1920 to 1928. He served as a captain in the U.S. Army during World War I. He retired from active practice in 1928.

Dr. Lerche was a member of the surgical staff at St. Luke's Hospital, St. Paul; a member of the Minnesota State Hospital for Crippled Children and the City and County hospitals; the Minnesota Academy of Medicine; the Minnesota Pathological Society; a charter member of the American Association for Thoracic Surgery; and was a renowned author and lecturer.

He was also a member of the Ramsey County Medical Society and the American Medical Association. He was granted Associate membership in the Minnesota State Medical Association in 1929 and Fifty-club membership in 1953.

Survivors are his wife, Sarah; two sisters, Mrs. Barbara Baetzman, St. Petersburg, Flordia, and Miss Aagot Lerche of Oslo, Norway.

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Woman's Auxiliary

39TH ANNUAL MEETING PROGRAM OUTLINED

The Host City for the 39th Annual Meeting of the Woman's Auxiliary to the Minnesota State Medical Association is St. Paul. Members of the Ramsey County Medical Auxiliary are in charge of arrangements for this year's meeting, May 22, 23 and 24, 1961.

The Annual Meeting will be called to order Tuesday, May 23, at 9:30 a.m. in the King's Room of the Lowry Hotel. Presiding will be Mrs. Walter P. Gardner, St. Paul, State President.

The Annual Luncheon will follow at 1:00 p.m. in the Ballroom of the Lowry Hotel.

COMMITTEES

General Arrangements—Mrs. Cyril R. Tifft.
Reservations—Mrs. Robert K. Grau.
Tickets—Co-chairmen: Mrs. Ellery M. James and Mrs. Barnard Hall.
Registration—Mrs. Coleman J. Connolly, Jr.
Printing—Mrs. Charles T. Eginton.
Hospitality—Mrs. Herman J. Wolff, Chairman.
Mrs. John G. Fee
Mrs. Robert K. Grau
Mrs. Robert C. Knutson
Mrs. Alexander McEwan
Mrs. Neil Palm
Mrs. E. Russell Sterner
Press—Mrs. David D. Norman.
Executive Board Meeting and Luncheon—Co-chairmen: Mrs. Rodney F. Sturley and Mrs. Albert F. Hayes.
Annual Tea—Mrs. William H. Von der Weyer, Chairman.
Mrs. Frank A. Adair, Jr.
Mrs. Frank S. Babb
Mrs. Lucian G. Culver
Mrs. George A. Earl
Mrs. Kjeld O. Husebye
Mrs. John R. Meade
Mrs. Leo A. Nash
Mrs. Charles W. Waas
Annual Meeting—Mrs. J. Paul Medelman, Chairman.
Pages—Mrs. Harry Eelkema
Mrs. John W. James
Mrs. Edward A. Peterson
Mrs. Melvin E. Witthaus
Annual Luncheon—Mrs. Harold O. Peterson, Chairman.
Mrs. W. F. Larrabee, Jr.
Mrs. Robert H. Monahan
Wednesday Coffee—Mrs. S. M. Loken.
Finances—Mrs. Ralph L. Olsen.

Mr. Chester Lauck (Lum of "Lum and Abner") will be the guest speaker at the Annual Banquet for all physicians and their wives at 7:00 p.m. on Tuesday, in the Continental Room of the St. Paul Hotel.

The Ramsey County Medical Auxiliary, the Hostess Auxiliary, extends a warm invitation to all Minnesota physicians' wives to attend this outstanding meeting. A special invitation is extended to those wives of Minnesota physicians who are not yet members of the Auxiliary.

A preliminary outline of the Program follows:

WOMAN'S AUXILIARY
39TH ANNUAL MEETING
PROGRAM

MONDAY, MAY 22

9:00-12 Noon	Registration, Mezzanine, Lowry Hotel.
10:30 a.m.	Executive Board Meeting, Womens City Club, 305 St. Peter Street.
1:00 p.m.	Executive Board Luncheon ($2.30), Womens City Club.
2:00-3:00 p.m.	Registration, Mezzanine, Lowry Hotel.
3:00-5:00 p.m.	Annual Tea, International Institute, 183 W. Kellogg Boulevard.
	All members are cordially invited to be guests of the Woman's Auxiliary to the Ramsey County Medical Society.
9:00 p.m.	Open House, Continental Room, St. Paul Hotel.
	Open to all doctors and their wives.

TUESDAY, MAY 23

9:00 a.m.	Registration, Mezzanine, Lowry Hotel.
9:30 a.m.	Annual Meeting, King's Room, Lowry Hotel.
	Open to all members of the Auxiliary.
	Presiding—Mrs. Walter P. Gardner, President, St. Paul.
	Pledge of Allegiance and Auxiliary Pledge—Mrs. E. G. Hubin, Sandstone.
	"I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation and ever sustain its high ideals."
	Address of Welcome—Mrs. C. M. Kelsey, President, Ramsey County Medical Auxiliary.
	Response—Mrs. D. G. Mahle, Plainview.
	Presentation of Convention Chairmen—Mrs. C. R. Tifft, St. Paul.
	In Memoriam Service—Mrs. H. H. Fesler, St. Paul.
	Greetings from National Association—To be Announced.
	Reports.
	Election of Officers.
1:00 p.m.	Annual Luncheon ($2.50), Ball Room, Lowry Hotel.
	Installation of President, Officers and Presentation of President's Pin—Mrs. C. L. Oppegaard, Crookston.
	Presentation of Gavel.
	Greetings from New President—Mrs. W. A. Merritt, Rochester.
	Fashion Show—Presented by Dayton's.
	Post Convention Board Meeting—To be Announced.
7:00 p.m.	Annual Banquet, Continental Room, St. Paul Hotel.
	Presiding—C. L. Oppegaard, M.D., President, Minnesota State Medical Association.
	Introduction of Mrs. W. A. Merritt, President, Woman's Auxiliary.
	Presentations—Fifty Club Certificates.
	Southern Minnesota Medical Association Medal.
	Distinguished Service Award.
	Address—Mr. Chester Lauck (Lum of "Lum and Abner") Continental Oil Company, Houston, Texas.

WEDNESDAY, MAY 24

10:00 a.m.	Coffee, Ramsey Room, Lowry Hotel.
	Mrs. S. M. Loken, Hostess.
	All visiting women are cordially invited to be guests of the Auxiliary to the Ramsey County Medical Society.

Meetings and Announcements

INTERNATIONAL

The Fourth International Conference on Medical Electronics combined with The Fourteenth Annual Conference on Electrical Techniques in Medicine and Biology, sponsored by: The Joint Executive Committee on Medicine and Biology . . . IRE-AIEE-ISA; Under the auspices of The International Federation for Medical Electronics and Organized by the Institute of Radio Engineers through its Professional Group on Bio-Medical Electronics, The Waldorf-Astoria, New York City, New York, July 16-21, 1961. For further information write to the Fourth International Conference, Institute of Radio Engineers, 1 East 79th Street, New York, New York.

* * *

The U.C.L.A. School of Medicine, in cooperation with the Hebrew University-Hadassah Medical School in Jerusalem and the Beilinson and Tel Hashomer Hospitals in Tel-Aviv, offer a Clinical Postgraduate Program in Israel, April 20 - May 7, 1961. Inquiries concerning the Israel tour and program may be addressed to: Dean of Continuing Education in Medicine, U.C.L.A. Medical Center, Los Angeles 24, California.

* * *

The Second International Postgraduate Course in "Recontructive Surgery of the Nasal Septum and External Pyramid," August 6-17, 1961, Jerusalem, Israel, under the auspices of the Department of Otorhinolaryngology, Mayer de Rothschild Hadassah University Hospital, and the Hebrew University-Hadassah Medical School of Jerusalem, in cooperation with the American Rhinologic Society. Lectures and demonstrations will be in English. For further information, write to Dr. Robert M. Hansen, Secretary, American Rhinologic Society, 2210 Lloyd Center, Portland 12, Oregon, or to Dr. Moshe Prywes, Dean of the Hebrew University, Hadassah Medical School, Jerusalem, Israel.

NATIONAL

The American College of Obstetricians and Gynecologists offers a postgraduate course in conjunction with its Tenth Anniversary Clinic Meeting, April 20-28, 1961, Americana Hotel, Bal Harbour, Florida. For further information write to the American College of Obstetricians and Gynecologists, 79 West Monroe Street, Chicago 3, Illinois.

* * *

The New York University Medical Center offers the following Postgraduate courses. Gynecological Endocrinology: Full-time, April 17-21, tuition $140; Ophthalmoscopy: part-time, April 24-28, tuition $60; Histopathology (in Ophthalmology): part-time, April 24-28, tuition $100; and a Symposium in Pediatric Surgery, full-time, May 4-6, tuition $75.

* * *

Symposium on Pediatric Surgery, May 4 - 6, 1961, New York University Medical Center, 550 First Avenue, New York City, New York.

* * *

Thirty-Eighth Annual Conference, American Physical Therapy Association, July 2 - 7, 1961, Palmer House, Chicago, Illinois. For further information write: Miss Lucy Blair, Executive Director, 1790 Broadway, New York 19, New York.

* * *

The Twenty-Seventh Annual Meeting, American College of Chest Physicians, Commodore Hotel, New York City, June 22-26, 1961. A joint session with the Section on Diseases of the Chest of the American Medical Association will be held at the Coliseum, June 26. For further information write American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

* * *

Thirty-Second Annual Meeting, Aerospace Medical Association, April 24-27, 1961, Palmer House, Chicago, Illinois. For further information write, Aerospace Medical Association, Washington National Airport, Washington 1, D.C.

* * *

University of Colorado Medical Center, Denver, Colorado, Postgraduate Courses: May 18-19, Intern-Resident Clinics; June 1-3, Physician Medicine and Rehabilitation for the Clinician; and June 19-21, Obstetrics and Gynecology. For further information write Office of Postgraduate Medical Education, University of Colorado Medical Center, 4200 E. Ninth Avenue, Denver 20, Colorado.

* * *

American Medical Association, Annual Meeting, New York City, June 25-30, Dr. F. J. L. Blasingame, 535 North Dearborn Street, Chicago 10, Illinois.

* * *

REGIONAL

The Central Regional Meeting of the American College of Gastroenterology, Schroeder Hotel, Milwaukee, Wisconsin, April 16, 1961. The Central Region consists of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin. A copy of the program may be obtained by writing to the Secretary, American College of Gastroenterology, 33 West 60th Street, New York 23, New York.

Summer Camp for Diabetic Children, under the auspices of the Chicago Diabetes Association, July 16 - August 6, Holiday Home, Lake Geneva, Wisconsin. Boys and girls from eight through fourteen years of age eligible. Application may be obtained from, Chicago Diabetes Association, 620 North Michigan Avenue, Chicago 11, Illinois.

* * *

The Chicago Ophthalmological Society, Annual Clinical Conference, Drake Hotel, Chicago, Illinois, May 19-20, 1961. For further information write Mrs. Mary E. Ryan, 1150 North Lorel Avenue, Chicago 51, Illinois.

* * *

Medical Continuation Courses, Center for Continuation Study, University of Minnesota. April 17 - 19, Internal Medicine for Internists; April 20 - 22, Otolaryngology for General Physicians; May 1 - 3, Ophathalmology for Specialists; May 8 - 10, Gynecology for General Physicians; May 11 - 13, Surgery for Surgeons; and May 15 - 19, Proctology for General Physicians. For further information write: Director, Department of Continuation Medical Education, 1342 Mayo Memorial, University of Minnesota, Minneapolis 14, Minnesota.

STATE

The Medical Continuation courses to be presented at the Center for Continuation Study, University of Minnesota include: May 1-3, Ophthalmology for Specialists; May 8-10, Gynecology for General Physicians; May 11-13, Surgery for Surgeons; May 15-19, Proctology for General Physicians; and June 1-3, Office Psychotherapy for General Physicians.

* * *

Minnesota State Medical Association, Annual Meeting, St. Paul, Minnesota, May 22-24, 1961. Headquarters at the St. Paul Hotel. Advance reservations and registration, write Harold W. Brunn, Executive Secretary, 496 Lowry Medical Arts Building, St. Paul 2, Minnesota.

* * *

Annual Meeting of the Minnesota Chapter of the American College of Chest Physicians, May 21, 1961, King's Room, Hotel Lowry, St. Paul. Registration begins at 1:00 p.m. For further information write Dr. C. J. Connolly, 471 Lowry Medical Arts Building, St. Paul 2, Minnesota.

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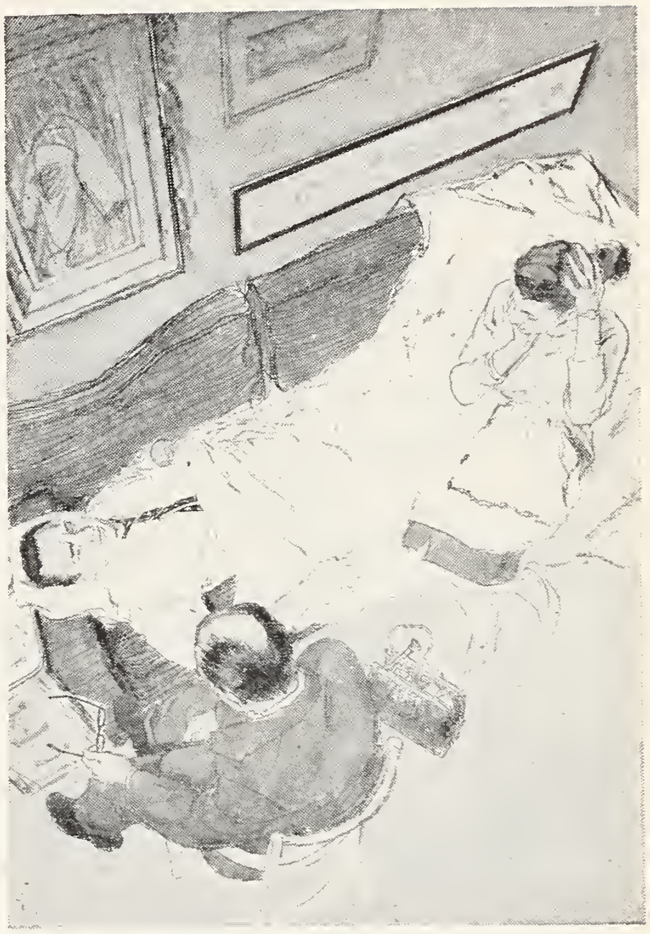

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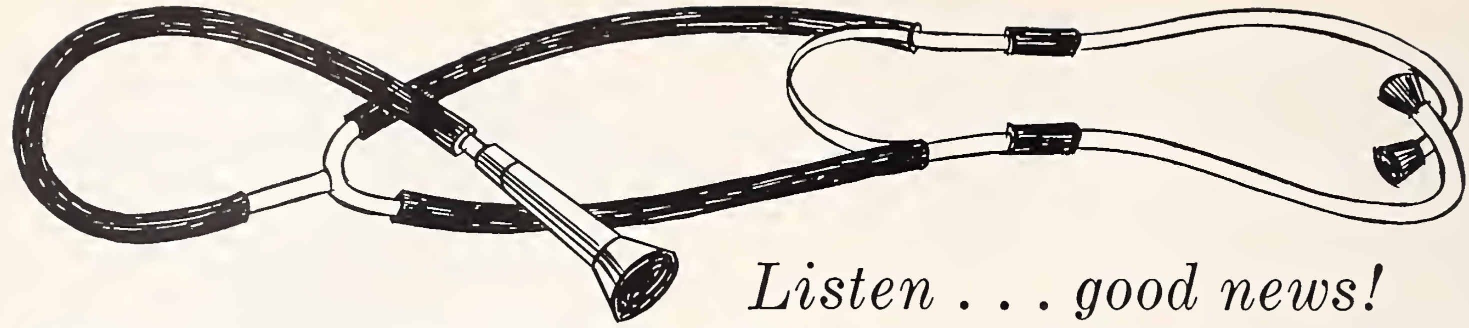

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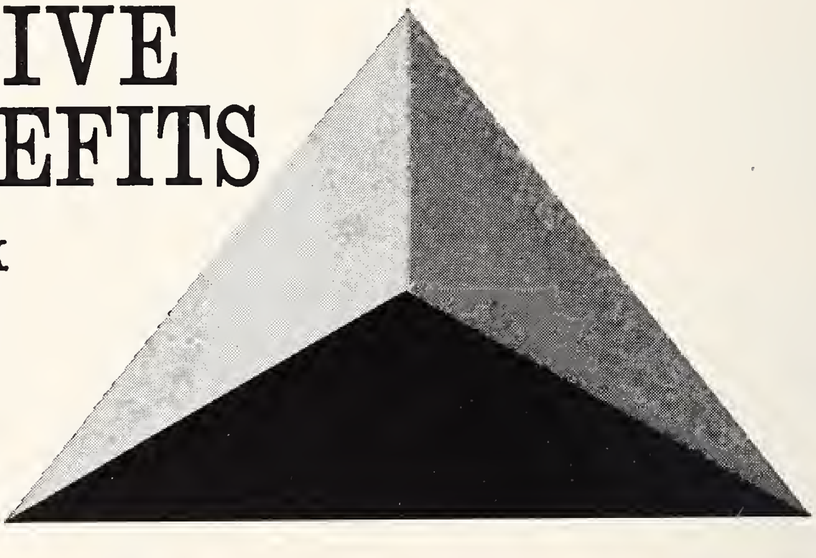

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The Physician's Diary

A member of the Starekow Clinic in Thief River Falls, **Dr. Daniel E. Greene**, has been elected President of the Red River Valley Medical Society at its annual meeting held in Crookston. Dr. Greene replaced **Dr. Clifford J. Stadem** in the presidency. Other officers elected were **Dr. Rudolph B. Skogerboe**, Karlstad, vice president; **Dr. Russell O. Sather**, Crookston, re-elected secretary-treasurer; **Dr. Milton D. Starekow**, Thief River Falls, named to the Minnesota State Medical Association House of Delegates; **Dr. Byron Kinkade**, Ada, named alternate delegate; and **Dr. Kenneth Covey**, Crookston, named to the society's Board of Censors. **Dr. Valentine O'Malley**, St. Paul, was the main speaker of the evening. He discussed disability examinations for social security benefits and presented a film.

* * *

Dr. Robert Miller, a native of Nashville, Tennessee, moved to Owatonna recently to become associated with Dr. D. H. Dewey in the practice of medicine, obstetrics and surgery. Dr. Miller graduated from the Indiana University Medical School and served one year's internship at Ancker Hospital in St. Paul. He received additional training in obstetrics and gynecology at St. Joseph's Hospital in St. Paul and also served as a physician for the St. Paul police department doing emergency ambulance service.

* * *

Two State Medical Association members have been elected to the Board of Members of the Mayo Association at its annual meeting. **Dr. J. M. Stickney** and **Dr. E. S. Judd** were elected as members to succeed retiring members **Dr. L. M. Randall** and **Dr. Waltman Walters**. Other members of the Board are **Dr. J. W. Kernohan**, Dr. Dwight L. Wilbur, San Francisco, Cal., Judge Warren E. Burger, Washington, D.C. and John M. Musser of St. Paul.

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The appointment of **Dr. Richard L. Engwall** of Tyler to the Scholarship and Loan Selection Committee of the Minnesota State Medical Association has been announced. The purpose of this Committee is to interview applicants for the Rural Medical Scholarship Award and to pick the annual winner in this category. The Committee also screens applicants for loans for medical students.

* * *

Dr. Milton Kaiser has been elected president of the Brown County Medical Society at its winter meeting held at the Dacotah Hotel in New Ulm. Dr. Kaiser is a practicing physician in New Ulm. Other officers named were **Dr. Carl Fritsche**, vice president, New Ulm and **Dr. P. J. Kitzberger**, secretary-treasurer, New Ulm. **Dr. Howard Vogel** and **Dr. T. R. Fritsche**, both of New Ulm, were named as delegates to the State Medical Association.

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The City Council of Virginia recently heard talks by **Dr. Mario Fischer**, Duluth, who explained the county-wide health set-up which Virginia has contemplated but not joined and **Dr. W. S. Neff**, Virginia, who explained the project to establish a mental health clinic on the Range. No decision or recommendations were made on either issue.

* * *

A new book on the life and work of **Dr. Henry S. Plummer** has recently been published by the Charles C Thomas Co. The book, entitled "Henry Stanley Plummer: A Diversified Genius" was written by **Dr. F. A. Willius** of the emeritus staff of the Mayo Clinic. Dr. Willius was a long-time professional colleague and personal friend of the late Dr. Plummer.

* * *

Dr. Henry Fisketti, Duluth, has been named Chief-elect of St. Mary's Hospital Medical Staff (Duluth). The announcement was made at the staff's annual dinner meeting. **Dr. William Rudie** was elected secretary succeeding **Dr. William Spang**. Elected to the Executive Committee as Chief of Clinical Services are **Dr. Josiah Fuller**, surgery; **Dr. E. E. Barrett**, pediatrics; **Dr. J. L. Tuura**, dermatology; **Dr. George Cowan**, psychiatry, and **Dr. W. D. Coventry**, chronic illness. **Doctors N. E. A. Leppo, F. T. Becker, C. M. Jessico** and **G. C. MacRae** have completed two year terms on the Executive Committee.

* * *

The appointment of **E. G. Oppen, M.D.**, Minneapolis, as medical director of Security National Life Insurance Company, Minneapolis, has been announced. Dr. Oppen is a graduate of the University of Minnesota.

* * *

Two Mayo Clinic doctors were among delegates at the 57th Annual Congress on Medical Education and Licensure held in Chicago. The three-day conference was sponsored by the American Medical Association's Council on Medical Education and Hospitals, the Advisory Board for Medical Specialties and the Federation of State Medical Boards of the United States. **Dr. Victor Johnson** and **Dr. R. D. Miller** attended the meeting as officials of the Mayo Foundation.

* * *

Dr. George E. Cardle, Brainerd, has been elected President of the Upper Mississippi Medical Society. The announcement was made at the Society's annual meeting. **Dr. G. I. Badeaux**, Brainerd, was re-elected Secretary.

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Among speakers on the program of a two-day course for nurse anesthetists employed in Southwest Minnesota hospitals were **Dr. John T. Martin**, Mayo Clinic, who discussed "Anesthesia for the Poor Risk Patient;" **Dr. F. L. Schade**, Worthington, who discussed "Problems of Analgesia and Anesthesia for Obstetrical Patients;" **Dr. L. D. Dawson** and **Dr. Vernon Vix**, both of Worthington, who discussed "Cardiac Problems in the Anesthetized Patient," "Cardiac Resuscitation" and "Use of the Pace Maker" and **Dr. R. R. Sawtell**, Worthington, who discussed "Problem of the Infant." The course was sponsored by the Minnesota Hospital Association, Minnesota Association of Nurse Anesthetists, Minnesota State Medical Association, Minnesota Department of Health and Worthington Municipal Hospital.

* * *

Dr. Charles Cooper, St. Paul, was the main speaker on the occasion of the observance of the Fiftieth Anniversary of the Chatfield Commercial Club.

* * *

The Albert Lea Medical and Surgical Center recently announced the appointment of **Dr. G. D. Sherrill** to its staff. Dr. Sherrill, formerly from Ashtabula, Ohio, will be active in the practice of dermatology.

* * *

Red Wing's city health officer, **Dr. W. R. Miller**, has resigned that position and announced plans to accept a position as medical director at the St. Paul Out-Patient Center. Dr. Miller served as city health officer since August 1957.

* * *

The Willmar State Hospital was host to the Tri-County Medical Society and their wives at a recent regular meeting of the Society. The program was presented by **Dr. Norvin R. Smith**, Director of Clinic Services. **Dr. L. J. Opsahl**, president of the Society presided over the business meeting that followed the program.

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Dr. Orvie J. Swenson, Waseca, was elected President of the Waseca County Medical Society at the group's annual meeting. **Dr. S. T. Normann**, Waseca, was elected Vice President and **Dr. R. D. Davis**, also of Waseca, secretary-treasurer. Official hosts for the meeting were **Dr.** and Mrs. **S. C. G. Oeljen.**

* * *

The first recipient of the Donald Church Balfour Visiting Professorship, **Dr. Owen H. Wangensteen,** University of Minnesota, was the guest of the Mayo Clinic recently. A four-day program of tours, lectures, conferences and dinners was planned for Dr. and Mrs. Wangensteen. Following the Mayo Clinic program, Dr. Wangensteen returned to Minneapolis to participate in the inauguration ceremonies of Dr. O. Meredith Wilson as president of the University.

* * *

Dr. James S. Hunter, Jr., Rochester, has announced the opening of a private practice in obstetrics and gynecology with offices located in his home. Dr. Hunter was formerly a consultant in the Mayo Clinic section of Obstetrics and Gynecology and will practice as a member of the staff of Olmsted Community Hospital.

* * *

Dr. L. J. Wilson, who has practiced medicine in Winona since 1952, opened a medical practice in Rushford March 1. He joined **Dr. John R. Peterson** in the Rushford Community Clinic. Dr. Wilson's father **Dr. R. H. Wilson** is continuing the practice in Winona.

Among those recently appointed to a new sixteen-member advisory committee on Vocational Rehabilitation is **Dr. George B. Martin** of Thief River Falls. The appointments were announced by the Commissioner of Education.

* * *

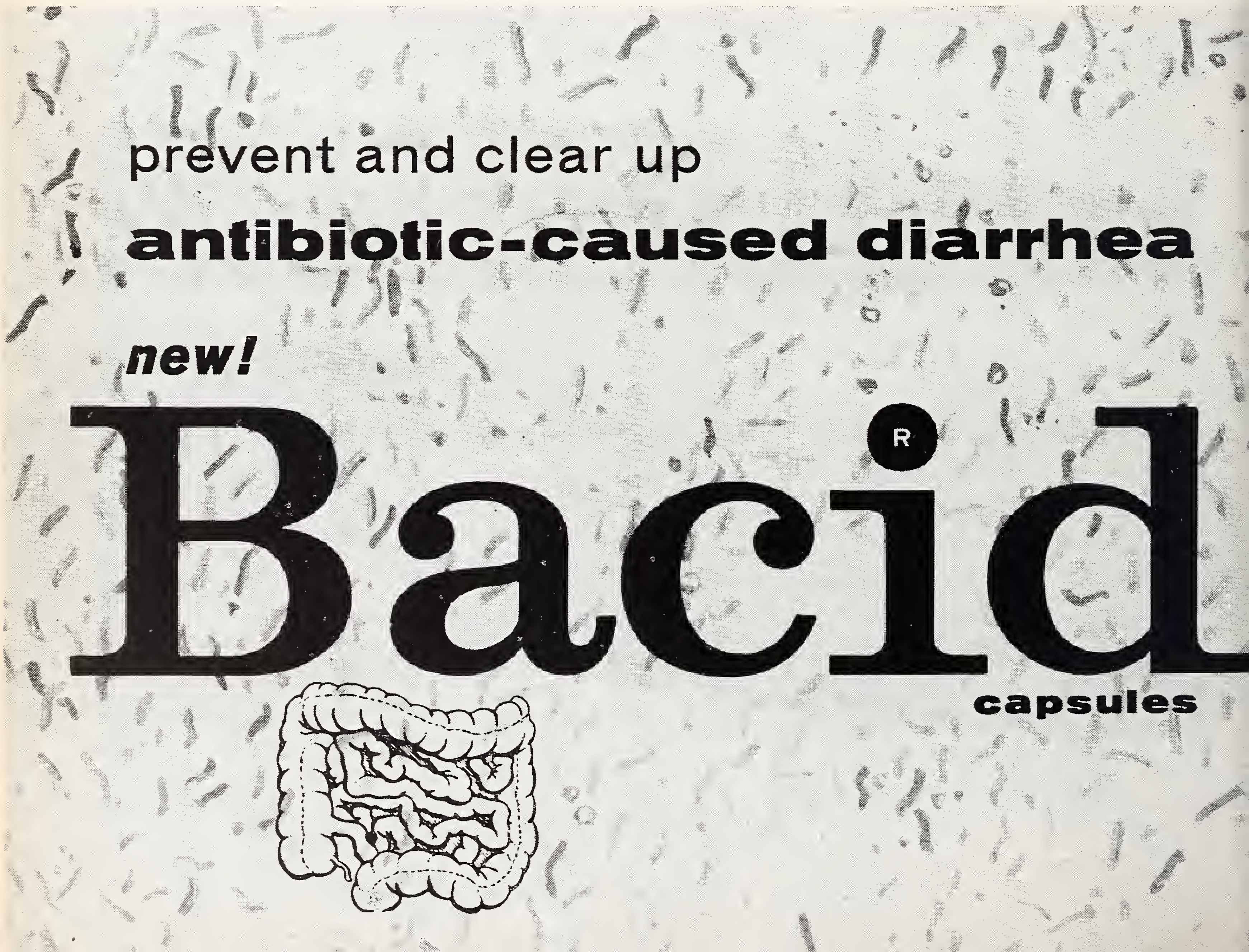
A general practitioner has begun practice in the Burnsville Medical Center. He is **Dr. Charles D. Officer,** a graduate of the Iowa University Medical School. Dr. Officer has had his office in Bloomington for the past two years. He is on the staff of St. Mary's Hospital in Minneapolis.

* * *

A Minneapolis physician, **Dr. Eugene Ahern,** was a participant of a recent meeting of the Minnesota Academy of Ophthalmology and Oto-Laryngology held in Minneapolis. Dr. Ahern spoke on "X-ray Diagnosis in Otolaryngology."

* * *

The new officers of the Medical Staff of Abbott Hospital (Minneapolis) include **Dr. Nathan C. Plimpton,** Chief of Staff, who succeeds **Dr. S. Lane Arey** who had served for two years. Named to the Executive Committee were **Dr. Malcolm Clark,** Department of Medicine; **Dr. Richard E. Reiley,** Orthopedic Surgery; **Dr. Karl Sandt,** Ophthalmology and **Dr. Herman Drill,** General Practice. Holdover members of the committee are **Dr. Robert D. Semsch,** Pediatrics and **Dr. John A. Haugen,** Obstetrics-Gynecology.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Dr. Henry L. Williams, Mayo Clinic, will be a participant in the Second International Postgraduate Course in "Reconstructive Surgery of the Nasal Septum and External Pyramid" which will be presented August 6-17, 1961 in Jerusalem, Israel.

* * *

Dr. James T. Priestly, Mayo Clinic, was one of the recipients of the Gold Medallion Award conferred upon twenty-two outstanding figures in American medicine by the Golden Slipper Square Club of Philadelphia in a special program entitled "Salute to Medicine."

* * *

Brainerd physician, **Dr. Bernard J. Hughes**, has announced that he has become associated with **Dr. Henry Broker**, general and thoracic surgeon, at St. Cloud. Dr. Hughes has been succeeded by his present associate **Dr. R. W. Poppie.**

* * *

An organizational plan to divide the state into eight districts under the Minnesota Tuberculosis and Health Association was discussed by **Dr. Viktor O. Wilson** and **Dr. David T. Carr**, both members of the Mayo Clinic, at a special meeting in St. Paul where the plan was adopted.

* * *

A special grant for a year of graduate study in problems of the skin has been created to honor **Dr. Hamilton Montgomery**, internationally recognized authority on dermatology and an emeritus member of the Mayo Clinic. The grant provides a year's stipend of $6,000.

Among speakers at the recent meeting of the Middle Section of the American Laryngological, Rhinological and Otological Society were **Dr. Wesley W. Spink, Dr. Robert W. Good** and **Dr. Thomas J. Kinsella**, all of the University of Minnesota. **Dr. Robert E. Priest**, Minneapolis, vice president of the Society in charge of the Middle Section arranged the program.

* * *

A New Ulm physician and surgeon **Dr. Frank J. Carthey** has been named president-elect of the Southern Minnesota Academy of General Practice. Elected to serve as officers this year were **Dr. George Rysgard** of Northfield as president and **Dr. Reuben Schmidt** of Alden, secretary-treasurer.

* * *

Dr. M. E. Odland has been elected chief of staff of the St. Mary's Hospital in Detroit Lakes. He succeeds **Dr. A. J. Houglum** of Lake Park. Other staff officers are: **Dr. A. S. Midthune**, Lake Park, Vice President and **Dr. Robert Watson**, secretary-treasurer who was reelected.

* * *

Dr. J. Arthur Myers, Minneapolis, participated in a Symposium on "An Orientation in Geriatric Management" presented by the five medical schools of Philadelphia and the Philadelphia County Medical Society.

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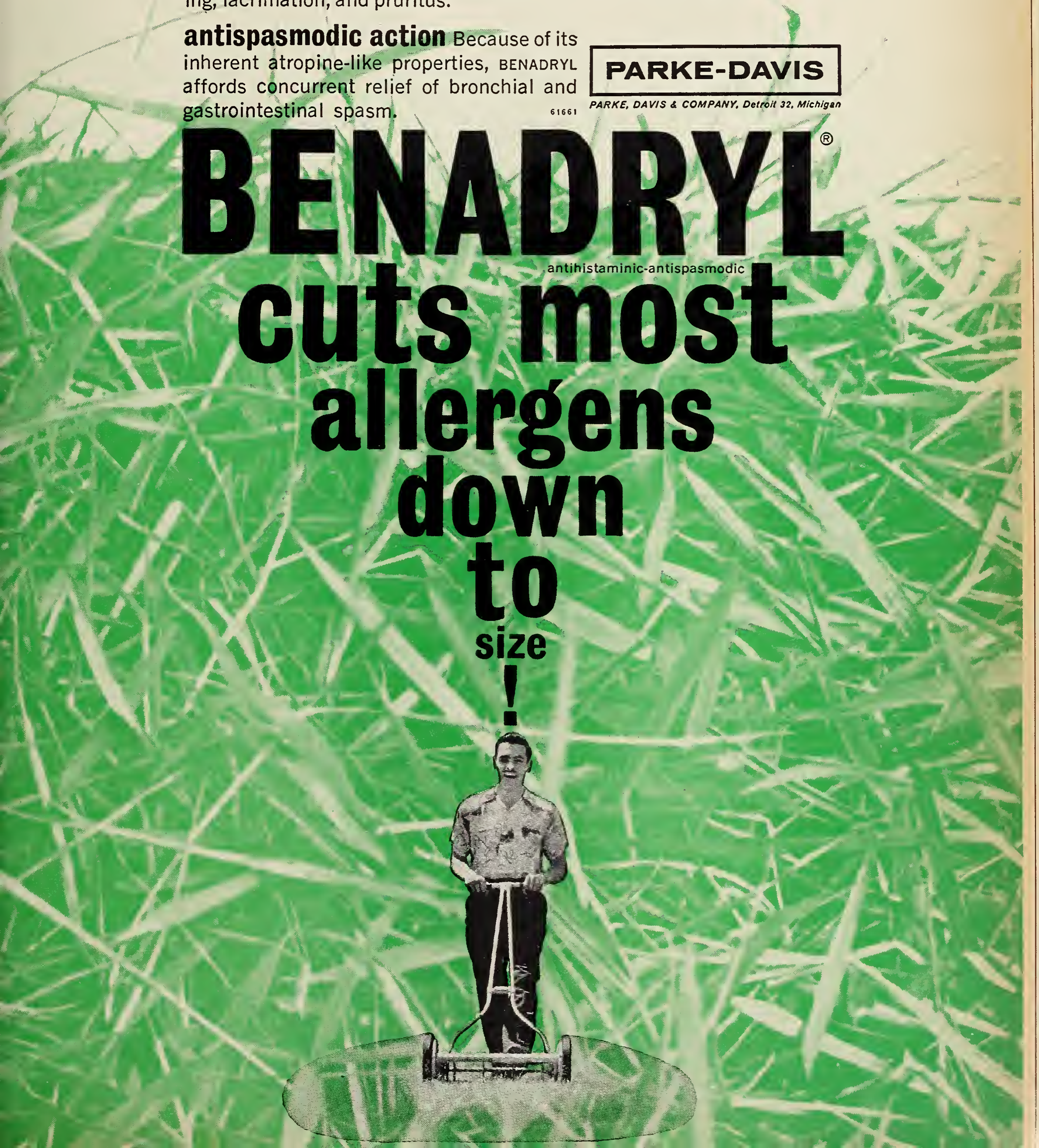

Minnesota

Contents for

SCIENTIFIC ARTICLES

ORIGINAL CONTRIBUTIONS

Catheter Duodenostomy in Gastrectomy

Hamlin Mattson, M.D., M.S. (Surg.), Minneapolis, Minnesota 181

Spastic Ileus of the Colon: A Description of Seven Cases

Claire J. Strobel, M.D., Claude R. Hitchcock, M.D., Ph.D.
Minneapolis, Minnesota 184

Abnormal Persistant Lactation

Vernon A. Vix, M.D., Worthington, Minnesota, ... 188

A Case of Suspected Botulism

William F. Nuessle, M.D., Harold E. Miller, M.D.,
Frederick H. K. Schaaf, M.D., Minneapolis, Minnesota 192

What do Practicing Physicians Expect of the Regional University Medical Center?

J. S. Detar, M.D., Milan, Michigan 196

Brenner Tumor Report of Case

William N. Spellacy, M.D., Anatol Lysyj, M.D.,
Minneapolis, Minnesota 204

ABSTRACTS AND BRIEFS 207

Minnesota Medicine Represents

Duluth Surgical Society
Minneapolis Academy of Medicine
Minneapolis Obstet. and Gynecol. Soc.
Minneapolis Surgical Society
Minnesota Academy of Medicine

Minn. Acad. of Occup. Med. and Surg.
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Minnesota Academy of Ophthalmology and Oto-Laryngology
Minn. Society of Clinical Pathology

Medicine

ay, 1961

Volume 44
Number 5

MISCELLANEOUS ARTICLES

PRESIDENT'S LETTER 209

EDITORIALS

Dear Brutus 211

Eight Goats, Three Apples
Medical Tribune 211

Emotional Factors in Coronary Occlusion
Barney M. Dlin, M.D., Philadelphia, Pennsylvania 211

MEDICAL ECONOMICS

ANNUAL MEETING PREVIEW 214
Inform Yourself and Others about Proposed Socialized Medicine Legislation 215

THE ART OF MEDICINE 219

MINNESOTA BLUE SHIELD A-41

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS A-42

MEETINGS AND ANNOUNCEMENTS A-43

WOMAN'S AUXILIARY A-44

IN MEMORIAM A-47

THE PHYSICIAN'S DIARY A-49

CLASSIFIED ADVERTISING A-56

INDEX TO ADVERTISERS A-57

Minn. Society of Internal Medicine
Minn. Society of Neurol. & Psych.
Minn. State Med. Association
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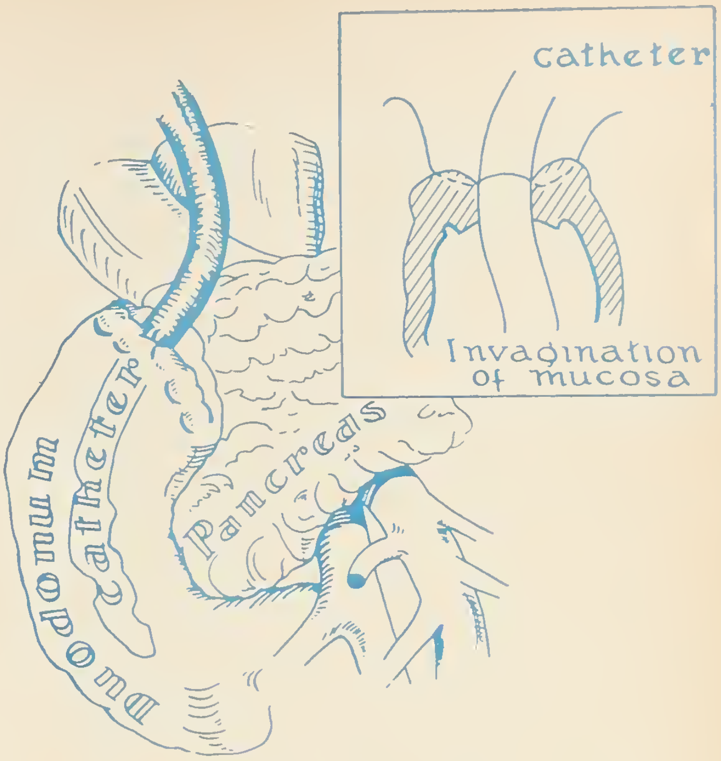

Fig. 1 Illustration of placing of catheter in duodenum

Catheter Duodenostomy in Gastrectomy

HAMLIN MATTSON, M. D., M. S. (Surg.)
Minneapolis, Minnesota

RUPTURE OF THE DUODENAL stump is the commonest cause of death following gastrectomy. Surgeons have struggled with this problem since gastric surgery began 80 years ago.

In most instances closure of the stump is not difficult. But every surgeon of mature background can recall patients in whom leakage has resulted in disaster; a stormy convalescence for the patient at best; at worst, death.

Incidence of this complication is given in the literature as between 0 and 3.7 per cent, but a number of cases must be missed. Catheter duodenostomy is simple and relatively safe insurance when leakage or rupture of the stump threatens.

Prophylaxis

A posterior wall duodenal ulcer perforating into the pancreas and embedded in a mass of scar tissue is the usual troublemaker. The scar contracts and shortens the duodenum.

To avoid the area of potential trouble, surgeons have resorted to procedures such as segmental or sleeve resection, vagotomy and gastroenterostomy, two stage operations and coning the mucosa from the antrum, among others.

---

*Abstract of paper presented at Regional conference of American College of Surgeons in Minneapolis, Minnesota, April 13, 1960.

The duodenum can be closed safely nearly always if enough viable wall is mobilized, tension on suture lines avoided, the stump buried in pancreatic capsule and, most important, if obstruction distal to the closure is avoided.

When the supraduodenal artery is ligated and other vessels tied, the blood supply to the duodenum may be compromised.[14] Often it is safer to leave the stump closure until last, the better to note viability.

Even a flimsy duodenal closure has a good chance of holding if there is no obstruction beyond. Contraction about an ulcer distal to the closure may spell disaster. The afferent loop of the gastrojejunostomy is the usual site of obstruction. Excessive infolding may compromise the lumen. Robinson[16] found that in dogs, if the jejunal lumen is compromised by half, the pressure proximally increases fourfold. Kinking of loops may be a factor in obstruction, sometimes caused by eccentric placing of the opening in the mesocolon. Or an unsecured mesocolon cuff may slip down over the anastomosis. A loop may slip in between an unsealed proximal loop of the anastomosis and the mesocolon. Small bowel obstruction distal to the gastrojejunostomy may distend the duodenum.

Satisfactory inversion is impossible sometimes because the duodenum must be sectioned near the ampulla of Vater. Cellulitis, edema and fibrosis may jeopardize healing. Use of nonabsorbable sutures seems logical in such situations, with digestant pancreatic secretion nearby.

The general condition of the patient may be a factor in dehiscence. Anemia, electrolyte imbalance and hypoproteinemia may affect wound healing and should be corrected. Deficiency of cevitamic acid may be a factor. A negative nitrogen balance may deter healing.

Treatment of Stump Leakage

Many fistulae are treated successfully by catheter suction into the wound and the temptation is to continue this treatment and hope for the best. Many small abscesses must absorb. But convalescence is prolonged. Subphrenic abscesses and other dangers threaten and it seems more logical, and experience in the literature shows it is safest, to recognize the condition promptly[1] and reoperate within 24 to 48 hours.

In 15 leakages and disruptions in a series of 500 cases of gastrectomy reported by Larson and Foreman,[5] two were discovered early. These two patients were operated on and survived. The other 13 died.

Catheter Duodenostomy

When a surgeon is committed to resection of the duodenum and closure is more difficult than usual, catheter duodenostomy offers a practical and relatively safe method of meeting the situation. In fact, he need rarely, if ever, avoid duodenal section with catheter duodenostomy in his armamentarium.

The method is not new. It was discussed by Billroth[2] as early as 1881, used spasmodically in the interim, and revived in popularity by Welch[12] in 1949. In the past decade it has received general acceptance. [9, 4, 10, 6, 11, 7, 3, 1, 8] It may be used whenever misgivings cross the surgeons mind as to the adequacy of closure of the stump.

A number 16 to 20 French catheter with multiple distal perforations is inserted 8 to 10 centimeters into the duodenum, anchored with 3-0 chromic catgut and made watertight with a 3-0 silk pursestring suture. (Fig. 1) Mucosa should be inverted and to do this the duodenum may be telescoped upon itself and held with another pursestring suture. If fat or omental covering is available it may be used; usually it is not necessary. The catheter is brought out through a stab wound and anchored to the skin. In 1959 Gingrich[3] reported closing the stump and draining through healthier duodenum with a T tube. Penrose drains are placed into Morrisons pouch.

The catheter is drained by gravity. Usually a few hundred cubic centimeters of duodenal contents are found in the bottle the first few days. In one case 1100 cubic centimeters drained the first day subsiding in a day or two. In the series of 10 cases reported here there was not enough drainage to create an electrolyte problem.

TABLE I

No.	Patient	Sex	Age	Symptoms	Catheter Duodenostomy Removal in days	Outcome
1.	E.C.	M	30	Bleeding 14 yrs.	11	Recovery
2.	F.B.	M	48	Obstruction 2 yrs.	8	Recovery
3.	G.L.	F	65	12 yrs. Intractability	21	Recovery
4.	T.F.	M	63	20 yrs. Intractability	7	Recovery
5.	A.J.	M	72	40 yrs. Bleeding Intractability	11	Died
6.	M.G.	M	72	5 yrs. Obstruction	10	Recovery
7.	N.J.	M	31	3 yrs. Obstruction	10	Recovery
8.	H.S.	M	54	1 yr. Bleeding	18	Recovery
9.	M.G.	M	72	6 yrs. Bleeding Obstruction	11	Recovery
10.	A.J.	M	64	2 yrs. Obstruction	10	Recovery

The catheter in the duodenum may come out the seventh to the twenty first day, whenever drainage has subsided and removal is easy.

In 144 personal cases of gastrectomy in the decade ending December 31, 1959 there were four deaths, an overall mortality of 2.8 percent. Catheter duodenostomy was resorted to 10 times or in 6.9 percent of the cases.(Table 1) Such were the more severe and complicated situations. There was one death among the 10 patients where duodenostomy was employed. This was a 72 year old man with a bleeding duodenal ulcer, bladder neck obstruction and azotemia, who unfortunately developed wound dehiscence.

Summary

The history of the development of catheter duodenostomy and the technic of application is described. Experience is reported with ten cases in 144 personal gastrectomies. The technique is simple and safe. It seems reasonable to expect that morbidity and mortality can be reduced in some cases by this alternate method of managing the duodenal stump.

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ABDOMINAL MIGRAINE SYNDROME

The symptoms of abdominal pain, nausea, vomiting and sometimes diarrhea, associated with the clinical picture of migraine, constitute the major symptoms of the abdominal migraine syndrome. It is seen primarily in children, or in adults who have suffered migraine for many years. The parenteral administration of ergotamine or intravenous histamine usually affords relief.

Moore's Syndrome (Abdominal epilepsy syndrome), presenting somewhat similar symptoms of abdominal pain, shows electrocardiographic findings suggestive of cerebral dysrhythmia.

Robert H. Durham

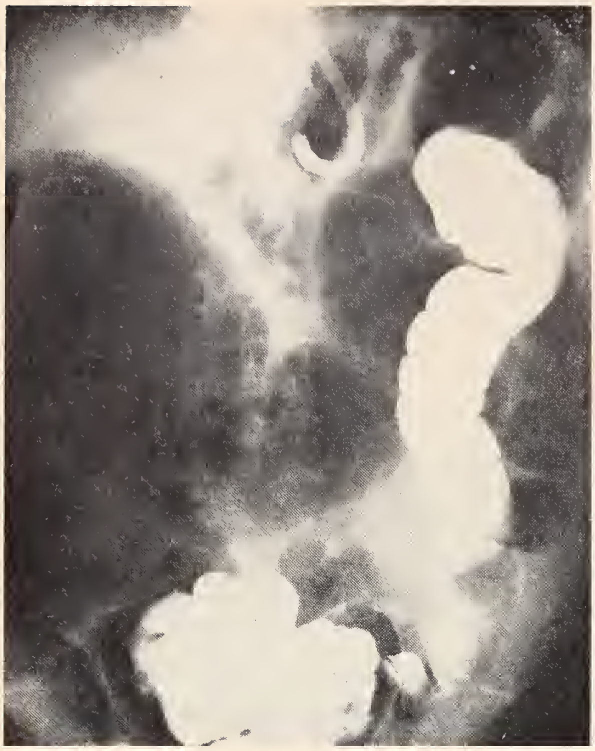

Fig. 1. A barium enema examination on patient (R.S.) with resistance of flow in the region of the descending colon beyond the splenic flexure. The roentgenologist could not push barium beyond this point with the use of acceptable and moderate pressures, and this was decided to be most likely a point of obstruction due to a carcinoma that was obscured by the barium.

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An entity to be watched for in clinical practice is presented by the authors; segmental spasticity of the colon (usually in the descending colon) is related to systemic stress effects. This is a difficult relationship to prove; however, the authors demonstrate a likely strong etiological relationship between stress of various kinds and the clinical picture of bowel obstruction due to regional tight colonic spasm.

IN RECENT LITERATURE little mention has been made of colonic obstruction due to spastic ileus (spastic colon), but current experience indicates this condition to be relatively common on a large acute surgical service. The most complete recent description of this entity was made by Wangensteen in his book on Intestinal Obstruction.[1] He listed four etiologic factors of spastic ileus, both of large and small bowel: 1. External cause due to injury, 2. Factors within the bowel (i.e., foreign bodies, worms, ulcers, and irritating intestinal content), 3. Neurasthenia and hysteria, and 4. Unknown. A recent review and description of 8 cases of spastic ileus of the colon was presented by Morton and his associates[2] at the 1960 Central Surgical Association Meeting. Their patients, however, were either septic or post-operative and had severe distention of all segments of the colon, which strongly suggested reactive paralytic ileus.

The cases herein described showed a *localized spasm* of the colon. They were indistinguishable, clinically, from an organic obstructing lesion. That this spasm may be a variant of the common paralytic ileus involving the entire gastrointestinal tract following surgery, peritonitis, acute pancreatitis, or septicemia, is a possibility. However, each of our patients had a high grade mechanical type of obstruction, localized to one short segment of the colon, and severe distention of the bowel proximal to the site of obstruction. The clinical picture in each case was entirely compatible with that seen commonly in organic obstructions of the bowel (see Table I for clinical details). Even in the one case where we considered the possibility of "functional" obstruction on the basis of "spastic ileus" of the colon, the unrelenting character of the lesion made an emergency deviating colostomy necessary to prevent rupture of the distended cecum.

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spastic ileus of the Colon

a Description of Seven Cases

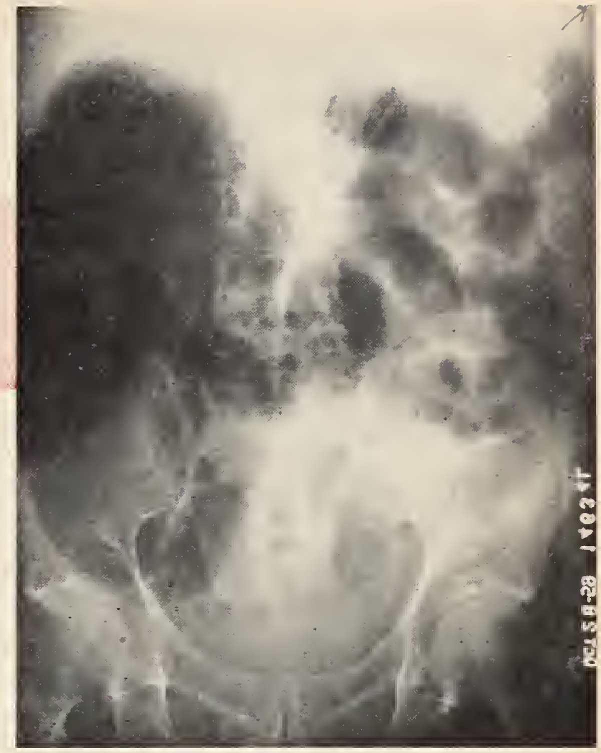

Fig. 2. Flat film of the abdomen in patient R.S. showing the extreme distention of the cecum and proximal colon with imminent danger of rupture. No organic obstructing lesion was found in this case.

Description of Clinical Cases

As noted in Table 1, 5 of the 7 cases were men and only one of the patients had undergone recent surgery. Admitting diagnoses were varied and included one patient with a 30% burn, two with pneumonitis, one with acute urinary retention (blood urea nitrogen elevated), two with severe chronic emphysema (chronic stress syndrome), and one patient post-operative from a transurethral resection. They ranged in age from 40 to 81 years.

Flat and upright abdominal x-rays were obtained for all patients and aided appreciably in the clinical evaluation; in addition, 4 patients had preoperative barium enema studies. In each barium study a definite locally obstructing mechanism was diagnosed. In one study a spastic ileus of the colon was considered by the diagnostic roentgenologist as a reasonable possibility. All plain films of the abdomen showed marked distention of the colon *proximal to the point of obstruction, and the cecum was greatly enlarged in each case.* The site of obstruction appeared to be in the mid-descending colon in 4 instances and in the proximal colon, low descending colon, and sigmoid colon in the remaining patients.

An emergency transverse colostomy was performed for each patient. Spinal anesthesia was used for 3 patients and no change in the obstructing mechanism was noticed secondary to nerve paralysis following the spinal anesthetic. Local infiltration with procaine was used as the anesthetic of choice in 5 patients. During surgery one patient was found to have a localized area of contracted colon 3 cm. long in the upper descending colon apparently accounting for his obstruction. Two others had obvious serosal tears in the cecum indicating imminent rupture of the cecum due to prolonged and increasing distention. The following case history emphasizes the features of this syndrome which so perfectly mimic mechanical obstruction of the colon secondary to an organic lesion.

TABLE I

CASE SUMMARIES

Pt.	Age	Admitting Diagnosis	X-rays	Site of Obstruction	Surgery	Anesthesia	Result
H.R.	40	30% second & third degree burns	4-19 marked cecal & small bowel distention; 5-13 colon distal to colostomy well filled with barium	Proximal descending colon	4-20 rt. transverse colostomy, serous fluid present; 10-14 colostomy closed	General	Obstruction relieved; complete recovery
G.A.	77	Acute urinary retention; urinary tract infection; uremia; BPH	1-27 colon dilated to iliac crest, lesion in mid descending colon implicated; barium enema, spastic ileus distention remained	Mid descending colon	1-29 rt. transverse colostomy, no organic lesion; 3-22 TUR; 4-3 TUR; 8-6 close colostomy; 8-10 cecostomy; 12-5 close cecostomy	Local & general General General General	Obstruction relieved; final complete recovery
O.A.	81	ASHD with cerebral arterio-sclerosis; BPH; hematuria; late staphylococcal septicemia	3-4 colon distended to mid descending; barium enema—questionable obstruction mid descending colon, possible spastic ileus	Mid descending colon	2-24 TUR; 3-4 rt. transverse colostomy	Spinal Spinal	Expired 3-11-58 Postmortem: bacterial endocarditis; carcinoma of prostate; metastatic abscesses of lungs, kidney, heart; encephalomalacia of cerebrum
H.S.	48	Bilateral acute bronchopneumonia (TB); bilateral pyelonephritis; hepatic failure	5-9 large & small bowel dilated to mid descending colon	Mid descending colon	5-10 rt. transverse colostomy	Local	Expired 5-17-58 Postmortem: confirmed previous diagnosis, severe fatty metamorphosis of liver
A.M.	74	Pneumonitis; heart failure; diabetes mellitus	4-14 distended cecum & small bowel; mechanical obstruction lower sigmoid; barium enema: obstruction at low descending colon	Low descending colon	4-15 rt. transverse colostomy, 300 cc. serous fluid, serosa of cecum torn; no organic lesion	Local	Expired 4-22-59 Pulmonary edema, intractable heart failure
R S.	60	Chronic obstructive pulmonary emphysema; chronic cor. pulmonale	10-28 marked distention proximal colon; barium enema: distal sigmoid area not distended; 11-23 colon study negative	Distal sigmoid	10-28 rt. transverse colostomy; taenia tearing	Local	Recovered; unable to close colostomy due to precarious respiratory status
K.S.	68	Severe chronic pulmonary emphysema & fibrosis; duodenal ulcer; bronchiectasis; ASHD	11-2 fluid level in colon, large amount feces in splenic flexure & descending colon; 12-14 barium enema, no evidence of obstructing lesion	Distal descending colon	11-13 rt. transverse colostomy, 3 cm. area spastic colon in lower descending colon	Spinal and local	Relieved distention, con'd ulcer management; precarious respiratory status

Case Report:

A 60 year old white man (R.S.) was admitted to the Minneapolis General Hospital on October 28, 1959 following two days of severe pain in the left flank and abdomen. The family physician had provided analgesic medication but the pain persisted and became more severe as the patient's abdomen became distended. He stated that he had not passed gas or had a bowel movement in two days in spite of medication with milk of magnesia and several tap water enemas. The night before admission to the hospital he vomited 5 to 6 times and was unable to retain anything orally.

Past history revealed that the patient had been confined to bed for many months following surgery in January, 1958 for a ruptured appendix and repair of a ventral hernia in August 1958. Eleven years prior to admission he had suffered a coronary occlusion and had been on a restricted exercise schedule since that time. Occasionally he had been treated with diuretics and KCL for short periods, and had been on such therapy at the time of admission. Several times each week the patient used oxygen therapy in his home for attacks of acute dyspnea and regularly used demerol for angina. The patient was severely incapacitated by his emphysema and was in a state of emotional stress for several days prior to the acute illness.

Physical examination revealed an acutely ill man with a protuberant distended abdomen. Active bowel sounds were present and were of a characteristic high pitched and tinkling quality; the abdomen was not tender but was tympanitic. No masses could be palpated and rectal examination was negative. The chest was increased in the P.A. diameter and there was wheezing in both upper lung fields with inspiratory and expiratory rales heard throughout both lungs. Without oxygen therapy the patient was cyanotic. The heart was enlarged and a grade 3 apical systolic murmur was heard at the apex. Dehydration was evidenced clinically as well as by a hemoglobin of 16.6 gms. per 100cc. and a hematocrit of 53.5. The leukocyte count was 14,800 with 81% polymorphonuclears, 16% lymphocytes, 2% monocytes, and 1% eosinophiles. Bleeding and clotting times were normal and platelet count and prothrombin time were normal. Urinalysis was normal and blood chemistries revealed a sodium of 139 meq. per liter, a chloride of 80 meq. per liter, and a carbon dioxide combining power of 36.5. The electrocardiogram indicated a left axis deviation and a low voltage compatible with pulmonary emphysema. Blood pressure was 140/80 with a pulse rate of 100 and a respiratory rate of 24 per minute.

Examination with x-rays revealed a severe distention of the proximal colon and interstitial fibrosis of both lungs. A barium enema study was performed and the roentgenologist had some difficulty passing barium through the distal sigmoid colon and the films suggested the presence of an ulcerating lesion at this site (Figure 1). The patient was hydrated with intravenous fluids and a tracheostomy was performed to facilitate pulmonary exchange and permit prolonged use of positive pressure assistance to respiration. Upon opening the abdomen the proximal colon and cecum were markedly distended, and adhesions were present generally about the peritoneal cavity: *no specific areas of obstruction were noted, however.* The colon appeared to be in imminent danger of rupture with linear tears in the taenia in several areas (see Figures 1 and 2; note the extreme distention of the cecum). A transverse deviating colostomy was performed and the bowel was decompressed.

The patient recovered from the surgery and a repeat barium enema study revealed a normal colon with no evidence of an obstructing lesion. Because of his borderline respiratory and cardiac status, closure of the colostomy was not done.

Three patients in this group expired from unrelated causes about one week following the colostomy. The others had immediate relief from their obstruction and two have had their colostomies closed. Of note is the difficulty encountered after closure in G.A. who required a cecostomy following closure of the colostomy because of recurrent large bowel dilatation. Two patients who are poor surgical risks due to poor pulmonary function still retain their colostomies.

Analysis of these case histories demonstrates a factor of stress (in greater or lesser degree) preceding the onset of the bowel obstruction in each instance. Several of our patients had physiologic mechanisms of stress in addition to severe emotional disturbance. It appears likely that such neurogenic imbalance as must exist to produce a tightly spastic segment of the large bowel can readily follow the pituitary-adrenal axis disturbances that underly the body's response to stressful situations.

Discussion

Presentation of this group of patients serves to emphasize the possibility of a *segmental spastic ileus of the colon* occurring as a secondary phenomenon following stress of some degree. We believe that stress is probably the common denominator causing the segmental spasm as noted in these patients.

Spinal anesthesia was not successful in relieving the spasm. Aside from indicating the exact level of obstruction, barium studies were not definitely diagnostic; although in one instance a spastic ileus was suggested by the radiologist.

We agree with Wangensteen that this entity, giving clear-cut evidence of high grade obstruction, is best managed with a transverse colostomy thus assuring an adequate decompression of the large bowel. Exhaustive diagnostic procedures are not indicated in the acute situation when cecal rupture is imminent but should be done at leisure following resolution of the patient's large bowel obstruction.

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Abnormal Persistent Lactation

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In "Abnormal Persistent Lactation" by Vernon A. Vix, M.D. the author has presented three interesting and well documented cases of persistent lactation in his practice. The literature on this subject has been well reviewed and extracted and indeed, although this particular syndrome is rare, this particular paper should be of reference value to anyone who is doing any volume of care of female patients.

TABLE I
CONDITIONS ASSOCIATED WITH GALACTORRHEA

1. Castration
2. Precocious and Physiologic menopause
3. Acromegaly
4. Simmonds disease
5. Chiari — Frommel Syndrome
6. A syndrome characterized by estrogenic insufficiency, galactorrhea and decreased urinary gonadotropins
7. Miscellaneous tumors
    a. Chorioepithelioma of testes
    b. Carcinoma of the adrenal cortex
    c. Psammosarcoma of the pineal body
8. Operative procedures
    a. Pneumoencephalography
    b. Thorocoplasty
9. Partial Ovarian Resection
10. Administration of certain drugs
    a. Hormonal substances
    b. Chlorpromazine
    c. Rauwolfia
11. Encephalitis
12. Idiopathic

PERSISTENT lactation following pregnancy or galactorrhea occurring without preceding pregnancy is an unusual occurrence. This condition is apparently of varied etiology and cannot at our present state of knowledge be completely explained. We have recently encountered three individuals with persistent lactation who illustrate some of the aspects of differential diagnosis and some of the problems presented in therapy. All three of these individuals presented themselves with the primary complaint of galactorrhea.

Case Reports

Case 1. Mrs. G. M. was 25 years of age when seen in March 1956. Following a normal pregnancy and delivery of her third child in October 1955 she developed a persistent right-sided headache and persistent lactation. She did not menstruate. Over a period of 2 years she had had to increase her ring size on two occasions and her shoe size had increased from 6 to 8½. Physical examination revealed features compatible with early acromegaly, however they certainly were not striking. Special studies revealed an enlarged sella turcica and normal visual fields. In June 1956 her serum phosphorus was 4.6 mg.%, protein bound iodine (PBI) 7.8 micrograms, urinary corticosteroids 0.86 mgm. in 24 hours, and 17 ketostoid excretion was 7.7 mg. in 24 hours. A basal metabolic rate was +18%. Beginning in April, 1956 the patient received x-ray therapy to the pituitary gland totalling 4000 r/a in divided doses. In January 1957 urinary gonadotropins could not be detected, the phosphorus was 6.0 mgm.%, PBI was 8.9 micrograms %, butanol-extractable iodine was 7.5 micrograms %, I 131 uptake 33% in 24 hours and a BMR was +7%. The patient has been maintained on 5 mgm. stilbestrol daily for 3-week periods alternating with 1 week off the medication. This medication suppresses lactation although it begins to reappear near the end of the one week off of medication. Her lactation has now persisted for 5 years.

In addition the patient has required symptomatic medication for headache. Because of severe right facial pain it was necessary to perform a subtotal resection of the right Gasserian ganglion. The patient's visual fields have remained normal and the sella turcica has not changed. Other measurements such as hand volume, ring size and shoe size have been stationary.

Case 2. Mrs. D. S. has been under the care of our group since early childhood. Her past history reveals nothing of note. She was delivered of her second normal child in January, 1955 at the age of 28 years. Following this she developed lactation which had persisted to the time she was last seen in September 1959. Her menstrual periods have been normal and on several occasions she was seen because of menstrual cramps. There has been no evidence of acromegaly and her visual fields and sella turcica were normal as late as 1958. Intermittent therapy with stilbestrol has had no effect on the lactation. The patient has continued to be otherwise well. The patient's physical examination including her general appearance is normal.

Case 3. Mrs. K. O. was 27 years old when seen in July, 1959. She complained of secretions from both breasts for a period of 2 months. She had had three normal pregnancies the last of which terminated in April, 1956. The patient's menstrual periods were normal and unchanged. Physical examination was normal except that secretions could be expressed from both nipples. Premarin® 1.25 mg. and Methyltestosterone 10 mg. had had no effect on the galactorrhea. Visual fields and x-ray of the sella turcica revealed no abnormalities. Other studies were as follows: PBI 6.1 micrograms %, urinary gonadotropins 7.2 units (normal 3-30) and a 17 ketosteroid excretion of 23.5 mg. in 24 hours. A vaginal smear revealed evidence of estrogen effect as could be surmised from the normal menstrual history. No specific therapy has been recommended and the patient is being followed.

Discussion

Galactorrhea has been reported under a number of different circumstances in the literature. Table 1 (1) indicates the conditions under which it has been reported to occur. A number of reports exist in the literature but no really sizable series has been accumulated. The largest and most often referred to series is that of Forbes et al. (2) These individuals report on a series of 15 individuals who had galactorrhea. In their series 9 of the 15 women had never been pregnant. Most of the individuals had amenorrhea, however some had irregular menstrual periods, and almost all of their patients showed evidence of obesity, hirsutism and seborrhea. Endocrine studies revealed decreased excretion of pituitary gonadotropins in all but one, and a 17-ketosteroid excretion which was felt to be above average in all but two individuals. Of their series of 15 cases 8 manifested either x-ray or visual field evidence of a pituitary tumor. In three individuals biopsy of the tumor revealed it to be a chromophobe adenoma. Lack of estrogen formation in this series of cases was proven in the majority of instances by the failure of the patient to menstruate following the administration and withdrawal of progesterone.

The above summarized endocrine findings seem to be those most frequently observed as indicated from the reported cases in the literature. Argonz (3) reported four cases, Greenblatt (4) two cases, and Dadey (1) one case, who also manifested a low urinary gonadotropin excretion and decreased estrogen effect as shown by either failure to menstruate normally or following progesterone withdrawal.

Although the above summarized series of cases seem to follow a pattern of endocrine change, instances of galactorrhea have been reported which do not follow the same pattern. Urinary gonadotropin excretion has varied from decreased levels mentioned above to normal excretion levels (5), (6), (7) and case 3 in one of the individuals observed by us, to elevated levels under certain circumstances such as large doses of chlorpromazine administration (5), and castration, or Precocious and physiologic menopause (3). Ammenorrhea and diminished estrogen effect is most frequently observed; however, there are instances of probably normal estrogen effect as manifested by normal menstrual periods illustrated by cases 2 and 3 of our patients with what was thought to be elevated urinary estrogen excretion and "hyperestrogenic" uterine bleeding (8). At least one instance of pregnancy has been reported during galactorrhea (9) and indeed it is a well known fact that some nursing mothers have regular menstrual periods and some have become pregnant (2).

17-ketosteroid excretion has not been studied in all of the reported instances of galactorrhea but it has been observed elevated in 14 of 16 patients in whom it was measured including the one instance it was measured in our patients.

From these relatively few reports however, one gets the impression that 17 ketosteroid excretion is frequently elevated. Mention is made in the literature often in connection with 17-ketosteroid excretion studies that these women with galactorrhea frequently are obese and manifest some hirsutism. Neither obesity nor hirsutism was present in the instances of galactorrhea observed by us.

As indicated by the physical findings and endocrine excretion studies summarized above, one rapidly becomes confused if an attempt is made to place all instances of galactorrhea into a specific pattern. The confusion is further compounded by the well known although rare occurance of persistent galactorrhea in males. (10)

Experimental studies on breast development and lactation are difficult to interpret and to apply to humans since there are definite species and even breed differences as to the effect of various endocrine factors. To develop good lobulealveolar breast growth it is apparent that both estrogen and progesterone are necessary. (11). Estrogen apparently causes primarily duct growth while in combination with progesterone more complete development occurs. The absolute amount of estrogen and progesterone seems more important than their ratio, however there is apparently a wide range in the ratio of one to the other for optimal effect which varies from one species to the next. There is evidence that the addition of growth hormone (GH) and prolactin to progesterone and estrogen will produce breast development, at least in the hypophysectomized rat, similar to that of late pregnancy (13). Under all circumstances GH and prolactin need not necessarily arise in the anterior pituitary since at least in the rat placenta substances similar or the same as GH and prolactin have been demonstrated. There is at present little evidence that the adrenal cortex is necessary for mammary growth (11).

Under normal conditions it has been shown that low levels of estrogen activate the lactogenic function of the anterior pituitary while higher levels of estrogen inhibit lactation. It has further been shown that lactogenic doses of estrogen may be inhibited by the concomitant administration of progesterone. Based on these two well known facts, the most popular theory regarding the initiation of lactation is that following parturition there is a fall in the estrogen progesterone ratio as well as a fall in estrogen which removes the inhibiting effect of progesterone and at the same time provides the low level of estrogen necessary to stimulate lactation. (15, 12)

Under certain circumstances in the rat it has been shown that prolactin alone will maintain suboptimal lactation (13). However in practically all species it is apparent that prolactin and an intact functioning adrenal cortex are necessary for the maintenance of lactation and in some species GH is further synergistic. (11). In experimental hypophysectomized-adrenalectomized animals it has been shown that replacement therapy with cortisol and desoxycorticosterone acetate (DCA) is essential in combination with prolactin to maintain lactation and the replacement of DCA is much the more critical of the corticoids (14). Thus while adrenal corticoid hormones are not essential in mammary growth they are essential in maintaining lactation.

To complete the discussion of lactation it should briefly be mentioned that the suckling reflex allows the release of oxytocin which is important in milk ejection and also may be either directly galactopoietic or act indirectly by increasing the release of prolactin. (11)

The above discussion of mammary growth and lactation is not intended to provide an easy explanation for the occurence of persistent galactorrhea seen clinically, since it is readily apparent that this is not possible at our present state of knowledge. It is apparent however that since prolactin is experimentally so uniformly important in initiating and maintaining lactation that it should be expected also to play an important part in the galactorrhea seen clinically. In the absence of placental tissue prolactin is produced only in the pituitary. One might surmise from the experimental evidence that the pituitary gland plays an important role in the occurrence of persistant lactation seen in humans. This belief is further strengthened by the large number of pituitary tumors that have been observed under such circumstances (7, 10, 2) as well as the well known frequency of galactorrhea in the presence of acromegaly. It is tempting to postulate from these facts that the anterior pituitary, even in the absence of a tumor, produces a hormone that is responsible for persistent lactation. Although the pituitary gland (perhaps eosinophilic cells) and prolactin probably are implicated our present methods do not as yet allow for proof of such.

Most authors on this subject agree that hormone treatment has not been effective in stopping lactation (4,7,9,8). This has been our experience also in the absence of acromegaly. In our one individual with acromegaly stilbestrol has been effective in suppressing lactation. However, the use of stilbestrol might also be justified in this instance because of evidence that estrogens antagonize growth hormone. (8) With the accumulation of information that so strongly implicates hyperfunction of the pituitary gland, x-ray therapy has been suggested (4) and in one instance, associated with tumor of the pituitary gland, x-ray therapy has been successful in stopping lactation. (7) Whether or not x-ray therapy in the absence of a demonstrable pituitary tumor is justified cannot be answered at this time.

Summary

Three instances of persistent galactorrhea have been reported along with endocrine studies in two of them. Reports of other instances of this condition have been reviewed and the experimental work on mammary development and lactation has been reviewed. Evidence that this syndrome is of pituitary origin suggests the use of x-ray therapy to the pituitary gland as possible effective therapy.

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ACHARD-THIERS SYNDROME (Cushing's Syndrome)

This syndrome first was described in 1921 and is characterized by adenoma or hyperplasia of the adrenal cortex, diabetes mellitus and facial hirsutism in women with a masculine type of hypertrichosis of the face, voice changes, hypertrophy of the clitoris and occasionally a male psychogenic outlook. Obesity of the trunk, stria, acne, hypertension and occasionally osteoporosis may be present. Carbohydrate tolerance is decreased. The syndrome is thought to be the result of overproduction of the various adreno-cortical hormones.

Robert H. Durham

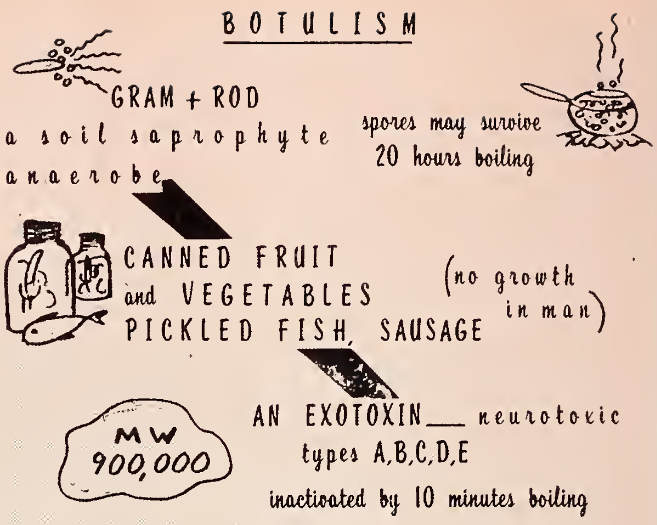
BOTULISM
GRAM + ROD
a soil saprophyte
anaerobe
spores may survive 20 hours boiling
CANNED FRUIT and VEGETABLES PICKLED FISH, SAUSAGE
(no growth in man)
AN EXOTOXIN — neurotoxic
types A,B,C,D,E
inactivated by 10 minutes boiling
MW 900,000

Fig. 1

A Case Report of Suspected BOTULISM

WILLIAM F. NUESSLE, M.D.
HAROLD E. MILLER, M.D.
FREDERICK H. K. SCHAAF, M.D.
Minneapolis, Minnesota

THE PATIENT IS A 37 year old farmer who became ill while doing heavy work in the hayfield on June 27, 1960. Ordinarily he perspired freely, but on this hot day he became unusually warm and dry and noted a collection of mucous in his throat which he had difficulty clearing.

When the patient reached home he drank about a gallon of water, orange pop, and coffee followed by slight lower abdominal distress. That evening at a picnic he found that it was difficult to swallow. The dysphagia persisted and progressed in the next twenty-four hours so that he was unable to take fluid and just a few ice chips by mouth. On attempting to drink he regurgitated through his nose.

During the night the patient arose at 3 a.m. to care for his newborn twins. He fell asleep in a chair and awoke having a choking spell. He had difficulty breathing and regurgitated. He soon noted profound pounding of the heart. He was taken to the local hospital where a spinal puncture showed 3 lymphocytes and 56 milligrams of protein. An electrocardiogram showed atrial fibrillation and Digitalis was started. The patient was transferred to Abbott Hospital on June 29. On the way to the hospital the patient began having diplopia for distant vision.

On physical examination a nasal voice was noted. His blood pressure was 140/98 and temperature 99.6 degrees F. His heart was fibrillating with a rate of 100, but there were no murmurs. There was paralysis of the pharynx but examination was otherwise negative. Blood counts, urinalysis, and serum electrolytes were normal. A second electrocardiogram showed a sinus rhythm with low T waves.

The patient presented the problem of bulbar symptoms associated with atrial fibrillation. In view of the history of extreme warmth and dehydration while working in a hot field with subsequent ingestion of large amounts of water, water intoxication or hypopotassemia were considered, but serum electrolytes were normal. Bulbar poliomyelitis was considered although it seemed unlikely in view of two negative spinal taps. Another consideration was that of an embolism secondary to cardiac thrombus associated with atrial fibrillation. The patient gave a history of the liberal use of a weed spray in the two weeks prior to his illness in the form of 2,4-D Amine. Ten days before, while spraying on a windy day, he became ill with malaise and headache. The symptoms quickly disappeared. The toxic effects of 2,4-D Amine were reviewed in a local poison control center. 2,4-D and its derivatives are widely used in broad-leaved weed control. Millions of pounds of this material are used every year. In animals toxic doses of 2,4-D can cause ventricullar fibrillation and death, but can also produce myotonia with muscular impairment of the limbs, mastication and swallowing. Quinidine or Quinine were suggested to combat the myotonia and also to suppress arrhythmia. Poisoning has not been definitely observed in man, but the symptomatology in animals and suggested treatment in man is reviewed in Table I (1):

TABLE I

2, 4-D POISONING
(Not observed in man)

SYMPTOMS:
1. *Weakness — lethargy*
2. *Anorexia, diarrhea*
3. *Myotonia — chewing and swallowing affected*
4. *Ventricular fibrillation and death*

TREATMENT:
1. *Gastric lavage*
2. *Supportive measures*
3. *Quinidine or quinine*
   a. *relieve myotonia*
   b. *suppress arrhythmia*

It was felt that toxicity to 2,4-D was possible. The patient was given 200 mg. of intramuscular Quinidine every four hours. Supportive measures and intravenous fluids were used.

On July 1 the patient was unchanged. On this day it was learned that a 14 year old boy who had been working as a hired hand on the same farm had a similar illness. On June 27 this boy noted fatigue, blurred vision, diplopia, slurred speech, and difficulty in swallowing. He did most of his communicating by writing. This boy had done cultivation in the patient's fields immediately after heavy spraying. It seemed possible that he may have toxic effect to the weed spray as well, although exposure was indirect and questionable. It was also determined that two days before the onset of illness in both patients, they had eaten a spoonful of chicken pot pie which was obviously spoiled and quickly discarded. Four frozen pies had been purchased on June 24 and baked at 350 degrees for one hour. Two were eaten in an hour by the patient and his wife. The other two pies were left in the closed oven over the pilot light. At 6 a.m. the next morning the patient took the pies out of the oven to use them for lunch. They were refrigerated five hours and then placed in an oven for 15 or 20 minutes before eating.

In view of the second instance of bulbar-like disease and the mutual eating of spoiled food, it became apparent that botulism must be considered. After a negative skin test, 20,000 units of type A and B botulism antitoxin was given intravenously. Treatment was repeated on the following two days, so that a total of 60,000 units was given. On July 4 the patient's diplopia disappeared, and he could swallow fluids. He improved quickly in the next two to three days, and he began to swallow solid food. The nasal quality of his voice disappeared. His condition was good when discharged eleven days after admission.

On July 1 the Minnesota State Department of Health was notified with reference to the suspected botulism, and they made thorough laboratory and epidemiological studies. The Health Department contacted the attending physician of the 14 year old boy, and the lad was hospitalized and also given botulism antitoxin. Unfortunately the remaining portion of the chicken pot pie had been destroyed so that studies could not be made. However, blood specimens were collected from both patients *before* the administration of the antitoxin and submitted to the Communicable Disease Center in Georgia. Neither antibodies nor toxin was

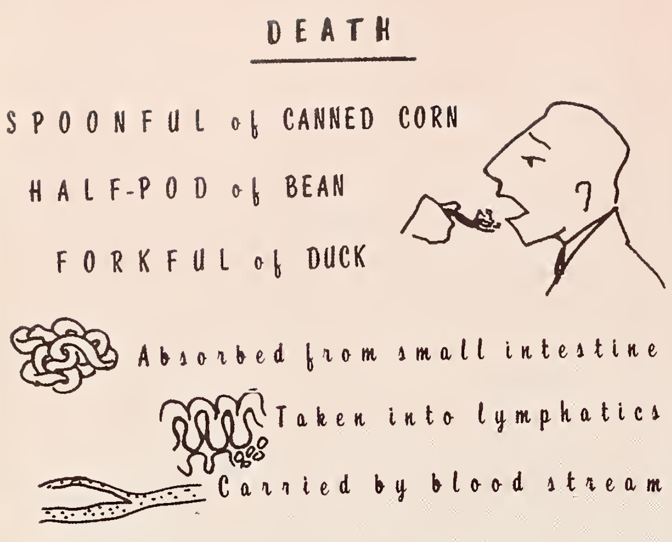
DEATH
SPOONFUL of CANNED CORN
HALF-POD of BEAN
FORKFUL of DUCK
Absorbed from small intestine
Taken into lymphatics
Carried by blood stream

Fig. 2

demonstrable in the blood. The health officials were not surprised in view of the small portion of food ingested. The Food and Drug Administration became interested and obtained chicken pot pies from the local grocery store and the St. Paul distributor. These pies were sent to Washington, D.C., and studied thoroughly, but with negative results. E. coli and staphlococcus were cultured, but their number was not significant. The animal tests for botulism were negative. Although these laboratory tests were negative, the Minnesota Health Department considers these two cases as botulism on a clinical basis.

Discussion: Botulism is a food poisoning or intoxication resulting from absorption of a poisonous substance produced by Clostridium botulinum. The disease was evident in Europe 200 years ago and was sometimes seen in individuals who had eaten contaminated sausages. For this reason the name of the illness is derived from the Latin word for sausage. Clostridium botulism is a motile, gram-positive, anaerobic bacillus which produces subterminal spores. Although it grows readily on artificial media, it does so only under anaerobic conditions. The organisms are natural inhabitants of the soil and are frequently present on fruits and vegetables and are thus carried into the gastro-intestinal tracts of animals and man. The organism produces an exotoxin termed botulinum. (Figure I) The exotoxin is formed under suitable conditions of anaerobic growth in a variety of food stuffs of animal and plant origin (2,3). The botulism exotoxin is by far the most potent poison known to man. Death has been reported from a spoonful of canned corn, a half a bean pod, and a fork full of duck. (Figure II) There are five toxogenic types labeled A, B, C, D, and E with A, B, and E known to cause food poisoning in man. The toxins are proteins with high molecular weight; nevertheless they are absorbed from the gastro-intestinal tract except in the rare instance of wound infection.

Mechanism of poisoning: In botulism the immediate cause of death is usually paralysis of the skeletal musculature which interferes with breathing. Botulism does not affect the central nervous system. Instead it produces a paralysis of the efferent parasympathetic nerves and somatic motor nerves by action on the end plate or myoneural junction. The antitoxin affects only the cholinergic system producing a decreased output of acetylcholine. Experimental bathing of the nerve axon with toxin produces no paralysis. If a muscle paralyzed by toxin is given direct stimulation, it will respond. If acetylcholine is added to a muscle-nerve preparation which has been paralyzed by the toxin, the muscle will also respond. Botulism toxin and curare have similar actions and have been used to map out the cholinergic system. (Figure III). It is felt that the basis of paralysis in botulism is spe-

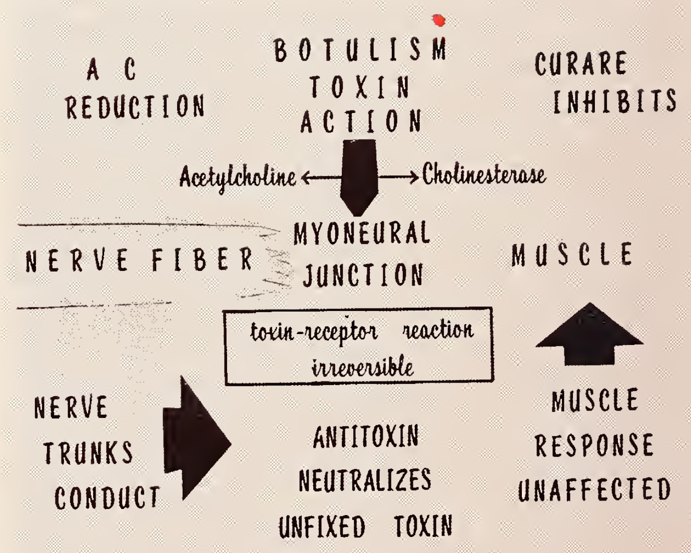
A C
REDUCTION
BOTULISM
TOXIN
ACTION
CURARE
INHIBITS
Acetylcholine
Cholinesterase
NERVE FIBER
MYONEURAL
JUNCTION
MUSCLE
toxin-receptor reaction
irreversible
NERVE
TRUNKS
CONDUCT
ANTITOXIN
NEUTRALIZES
UNFIXED TOXIN
MUSCLE
RESPONSE
UNAFFECTED

Fig. 3

cific interference with the release of acetylcholine from the terminal ends of the nerves (4, 5).

Prophylaxis: The usual food products causing botulism are canned fruits and vegetables and canned or preserved fish and meats. Commercial packers who use sterilizing techniques with high-pressure steam ordinarily destroy all spores. The chief danger lies in home-canned products. It is recommended that home preserved products be boiled for ten minutes before use. The spoilage of food may be suspected by foul odor or gas.

Botulism usually occurs in families or small groups with about fifteen outbreaks reported annually in this country. Two recent cases of botulism were the first reported in Great Britain in 23 years (6). Immunizing preparations have been prepared for use in animals, laboratory personnel, and for the theoretic use as protection in warfare. Botulism toxin was a threat as a chemical warfare agent in World War II (4).

Prognosis: The fatality rate in type A botulism is 70% while in type B it is 20% or less. If a patient survives the first ten days of illness, his chance of recovery is good, although he may convalesce for as long as six months.

Treatment: General therapeutic measures in botulism include rest, maintenance of fluid balance, and measures to prevent bronchial pneumonia. Type A and B antitoxin should be given in a dosage of 50,000 to 100,000 units. The antiserum does not reverse the effects of toxin which has already damaged the myoneural junction, but it will neutralize that which has not yet been fixed by the receptor cells. It is apparent that early administration is important.

Summary

This 37 year old farmer had aphagia, diplopia, dysarthria, and atrial fibrillation possibly due to toxicity of 2,4-D Amine. However, in view of the associated illness of a 14-year-old hired boy who, with the patient, ate a spoonful of spoiled chicken pot pie two days before each became ill, it would appear that botulism is more likely. Both recovered completely.

Conclusion

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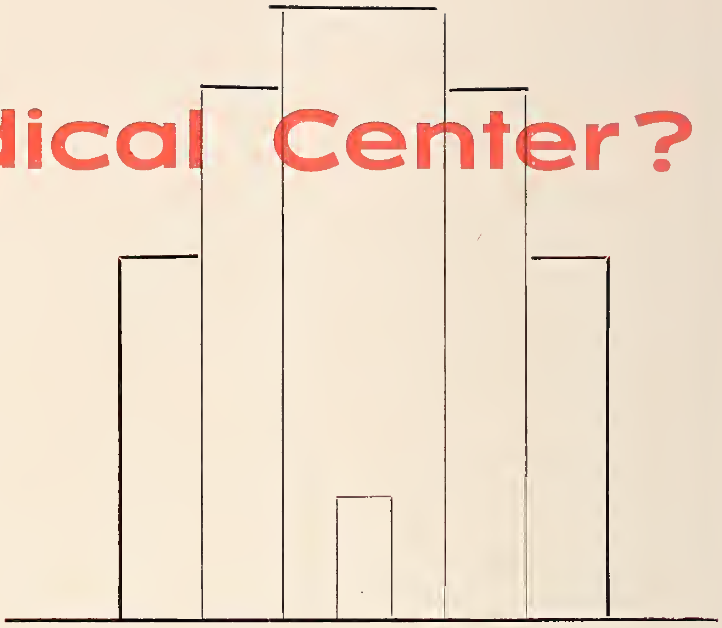
2. Principles of Internal Medicine, McGraw-Hill Book Company, Inc., New York, T. R. Harrison.
3. Zinsser's Textbook of Bacteriology, Appleton-Century-Crofts, Inc., New York, 1952.
4. Carl Lamanna, Science, 130: 763-772, 1959.
5. J. W. Stevenson, American Journal of Medical Sciences, 235:317-336, 1958.
6. E. M. Mackay-Scollay, The Journal of Pathology and Bacteriology, 75: 482-485, 1958.

Make it thy business to know thyself, which is the most difficult lesson in the world.—*Cervantes*

He wears his faith but as the fashion of his hat.—*Shakespeare*

What do Practicing Physicians Expect of the Regional University Medical Center?



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ONE OF THE MORE enjoyable privileges of those who do not pose as experts is that of making the diagnosis and watching the specialists fight to disprove it. The writer was placed in exactly this position at the University of Michigan Medical Center when asked to address the faculty and alumni on the above subject. I had never run a medical center; but for thirty years as a rural community generalist, I had referred to the University Center and felt quite capable of making my own diagnosis, but was not certain that my own attitude represented the profession throughout the state.

I sought out some opinions other than my own, and as always, it has proved interesting to discover what other Michigan physicians expect of the University Medical Center. I invited opinions from some twenty-six of the leaders of the medical profession in Michigan in the persons of the officers and counselors of the Michigan State Medical Society and the chairmen of the Society's principal committees, plus a dozen prominent physicians in the Ann Arbor area.

Although this paper treats specifically of the problems indigenous to the relationship of Michigan physicians to their own medical center, I suspect that Minnesota physicians are likely to think along similar lines, perhaps with the same unresolved conflicts lurking in their own subconscious cerebration. What follows is exactly as presented to the University of Michigan Medical Center group, and constitutes a composite of the answers to direct questions put to these forty Michigan physicians.

The questions asked may have been slanted. At least they were provocative, as the answers are certainly not stereotyped. I want to give them to you for what they are worth, the bitter with the sweet. I found the attitudes on the Medical Center expressed by my correspondents to be most interesting. One correspondent starts out by saying that when the time comes that we are satisfied with our attainments, it will be time for us to change professions. I think he is right; there is no progress in the status-quo.

Since the University Medical Center consists of three divisions, namely, the Medical School, the University Hospital, and the School of Nursing; and since I was interrogating physicians only, I invited opinions on just the first two divisions—the Medical School and the University hospital.

The Specialties and General Practice

The first question on the Medical School was this: *"Does the Medical School fulfill its function of providing well trained physicians for the people of Michigan—first, in the specialties, and secondly, in general practice?"* Referring to the specialties, thirty-five said yes, and only three had no opinion.

Typical of the comments on training students is this opinion submitted by a Detroit man: "With respect to the quality of graduates I believe they are well trained, efficient and have good sound judgment. In spite of the increased numbers of students, the Medical School has continued to graduate high class men and women, the type which is a credit to the profession and the school." There is almost unanimous concurrence with this attitude.

When this question was directed to general practice, however, the results fall far short of such unanimity. Only fifteen said yes, nine were in doubt, fourteen said definitely no.

You will be interested in some of the remarks on this presumed failure of the University Medical Center to provide the type of *well trained generalist* who is in greater demand throughout Michigan and throughout the country than any of the specialists.

Here are some of the comments: One Ann Arbor physician suggests that the entire Medical Center program could be more accurately pointed to the needs of the people of Michigan.

"As in all medical schools, insufficient consideration is given to those planning for general practice; the value of specialization being emphasized in all departments." This is from an internist with special interest in geriatrics.

From Charlevoix comes this explanation: "Being trained entirely by specialists, and having more to do with special problem cases is not too conducive to encouraging men to enter general practice."

Our correspondent from Lansing demonstrates an understanding of the problems faced by the curriculum committee. He says: "I fear that the deficiencies which do exist may be a demonstration of the trend of the times rather than the fault of the school, but I still feel we need more emphasis on the values to be found in general practice."

From the Thumb area comes this suggestion: "The Medical School should stimulate the realization that general practice still is the backbone of the practice of medicine and that general practice provides a wide area of service to the public and a great challenge to the practitioner."

From Saginaw comes this observation: "There is too much inbreeding on the teaching staff."

One Ann Arbor observer adds that: "Several young men have been actually talked out of general practice by members of the faculty." Another believes: "The Medical School is caught in a dilemma whether to produce physicians or research techniques." One intern in Ann Arbor said he had never seen a cast applied during his four years of training.

These observers raise some potent questions and some interesting alternatives. So, I ask:

1) Is it the function of the Medical School to train students specifically for general practice, or specifically for a certain specialty; or is it the function of the Medical School to provide sound fundamental training simply to prepare the student to be a good physician prepared for either general practice or a specialty?

2) Does general practice constitute an outmoded form of medical care soon to be assumed by internists (a thesis definitely held by some educators), and if so, what training should an internist have to equip himself to handle the pediatrics, obstetrics and trauma a family physician should be prepared to treat?

3) Or, is the medical profession ready to turn over general practice to cultists? At least 25% of Michigan's family physicians are osteopaths —unquestionably the result of post World War

II reduction in the number of generalists caused by the increase in the production of specialists. Our Saginaw correspondent raises the question as to whether the assumption of medical care by cultists is not truly a responsibility to be shared by the Medical Center, since the policies of the Medical School and the University definitely do influence the supply of generalist family physicians.

4) Or, should the University Hospital entirely bypass the problem of training interns for general practice, and limit its efforts to the training of specialists, leaving the training of generalists to smaller community hospitals where contacts with family physicians and with the problems of general practice are the rule rather than the exception?

5) Or, should the University Medical Center greatly enlarge its two year program in preparation for general practice in cooperation with many other hospitals in addition to the two hospitals now so functioning?

These alternatives all bear on the answer as to whether the University Medical Center is fulfilling its function of providing well trained physicians for the people of Michigan. For the specialties, the answer is an unquestioned affirmative; for general practice, the answer is debatable.

It would seem that if the premise of this question is justifiable, namely, that it is the function of the University Medical Center to provide well trained physicians for the people of Michigan, and if the need for well trained generalists is not being met, and if the people of Michigan should look to the University Medical Center for leadership and guidance in the provision of comprehensive medical care, then it is appropriate for the Medical School and the University Hospital to consider these observations and alternatives advanced by the leaders of the medical profession throughout the state.

I am sure there are alternative methods of achieving the desired objective.

To Improve Medical Education

The next question was this: *"What do you suggest for the Medical School to improve its value to the people of Michigan—as applied to students, internships, residencies and postgraduate medical education?"*

As you might expect, this leading question called forth a great variety of suggestions; so easy to offer, so difficult to carry through. But you may be interested in them as they may represent a fair cross section of opinion within the profession.

Many correspondents suggest that the total medical course must be shortened, or that a total of six years of formal schooling is sufficient, or that the internship be eliminated as a relic of the past. In fact it is surprising how many of these men favor eliminating the internship in University Hospital.

One man in Detroit states that the student needs more clinical material, particularly in acute diseases, and another tongue-in-cheek suggestion is that the Medical School move to a metropolitan area. Many correspondents emphasize the need for developing in students a better understanding of socio-medico-economic problems, particularly in the field of medical insurance with recognition of the need to "use not abuse" the doctors' plan, Blue Shield, to guarantee its survival.

One man particularly interested in geriatrics believes externships in convalescent homes are necessary to develop in the student an appreciation of the problems in this growing field of practice.

Several believe the student is becoming a slave to laboratory diagnosis, and suggest fewer lectures, more bedside teaching and more emphasis on the art of medicine.

One man in Ann Arbor states that the Medical School is already too big, and quotes students as his authority. Many are of the opinion that the Medical School must under no circumstances yield to the pressure to accept more students. So here are the criticism and the suggestions. And yet, with these and many more, most of these observers agree with Dr. William A. Hyland of Grand Rapids that the University Medical School is one of the five finest institutions in the country judged on any basis.

One internist asks for more practical teaching in medicine, stating that "nowhere in the curriculum is there any practical instruction on what to do IN A HURRY without facilities for a research type work-up on an emergency patient."

Certainly the curriculum committee of our Medical School has no easy task. With these demands for more art of medicine along with more science; for economic education along with scientific; for more instruction in fewer years; for two year internships and for no internships; and no doubt with pressure from every department for more teaching hours at the expense of some other department; with two hundred freshmen every September to transform into good physicians, Dean Hubbard and his curriculum committee have their hands full. If the tenor of these replies may be assumed to represent medical opinion throughout Michigan, it becomes obvious that full confidence in our Medical School leadership is expressed.

The Internship

One Detroit specialist believes that the University Hospital should provide comprehensive training for general practice in a two year period with extensive use of out-state community hospitals—a coordinated, integrated program.

Another believes that the teaching staff should alter its attitude on specialization as the only acceptable form of medical practice.

Still another refers to the attitude of faculty: "It would be wonderful if interns and residents could be given the idea that every doctor who refers patients to the "Master" is not necessarily a dumb dolt." (There is such a word. It means a "stupid fellow.")

And still another asks that the faculty improve its attitude toward internships in hospitals other than the University Hospital.

One pediatrician in Saginaw, in fact, proposes that the University discontinue the internship program entirely. In this opinion he is joined by an Ann Arbor internist, a Detroit dermatologist, and a Detroit pathologist. He adds: "The general hospitals can offer a better, more diversified, more rounded training, closer contact with the patient and the community, and a better understanding of the problems of family practice than the University can ever offer."

This question of the value of a one year rotating internship is currently a hot one. The American Medical Association officially approves of a minimum of two years training in a well integrated problem designed as preparation for general practice. In the current issue of "The New Physician," the student AMA publication, Dr. Victor Johnson of the Mayo Foundation states that this two-year program could well be utilized in the training of all specialists, except perhaps surgeons.

There is universal agreement among medical educators that a one-year rotating internship is inadequate as preparation for the practice of medicine in any field, general or special. The American Academy of General Practice agrees, and will require a minimum of two years of graduate training for membership after 1965.

The Council of Medical Education and Hospitals of the A.M.A. is currently working on the problem of developing the minimum two-year training in all hospitals offering training for general practitioners.

It seems only logical that the University of Michigan should take the lead in this movement which has the support of the entire medical profession, with a greatly enlarged program integrating the teaching advantages of the University Hospital with the practical experience advantages of community hospitals throughout the state.

It's logical, but is it possible? At least it deserves intensive study. The doctors of Michigan look to the University Medical Center for leadership in this field of graduate training.

Residencies

There is practically universal approval of the high quality of University Hospital residency programs.

The President of the Michigan State Medical Society offers this suggestion: "It would seem to me that a better residency program would be obtained by taking the third year residents out of the observation posts at the University Hospital and assign them during that year to the "firing line" where live ammunition is available in our general hospitals throughout the state; they would then return to Ann Arbor to perfect their techniques. This is an additional appeal for integrated graduate training on a state-wide basis with the University Hospital as the home base.

Postgraduate Education

One correspondent suggests that only experienced clinicians serve in teaching assignments in the decentralized program throughout the state, with elimination of weaker instructors.

Generally, our panelists voice strong approval of the postgraduate program, one Ann Arbor surgeon saying, "I think John Sheldon and Harry Towsley have done an outstanding job. I have realized in my travels that the University of Michigan is far ahead of other universities in their attempt to continue the education of doctors."

So much for attitudes concerning the Medical School and the graduate teaching programs of the University Hospital. I am certain that the administration of both the Medical School and the Hospital have considered all these points—probably over many years. It may well be, however, that the time is rapidly approaching when real alterations in teaching techniques are indicated.

The University Hospital

Regarding the University Hospital the question asked was this: *"Does the University Hospital render care to referred patients in a manner satisfactory to (1) the referred patient, and (2) the referring physician?"*

It is natural that such a question would call out criticism based on a single unsatisfactory experience by some correspondents, although the general tenor of the replies was most complimentary of the Hospital as a referral center.

Our Battle Creek reply states: "The University Hospital has improved immeasurably during the past five years in its patient care and its physician relationship."

One Ann Arbor physician remarked: "I even get phone calls on progress while the investigative work is in progress."

The Patient

There are some definite suggestions concerning the patient. Here are a few:

1) "More rapid processing and quicker discharge from the hospital." (I am sure this has been the subject of much discussion by hospital staff.)

2) "Better recognition of the referring physician's contributions to the case by staff members at the hospital, particularly in conversation with the patient."

3) "There is an intangible something lacking in patient contact, although I hesitate to criticize because patient rapport is much more difficult in a teaching hospital than in hospitals like Harper or Ford."

4) "Eliminate the commercial aspect of the large deposit before the patient is examined."

5) "Cease treating the patient like an intellectual cripple. Students and staff could both improve their techniques to relieve the patient's anxiety by just a few minutes of explanation along the way."

When the question was raised as to method of improvement in physician relationships by the University Hospital, the correspondents became quite vocal. Here are some of their suggestions:

1) "More prompt reports on diagnosis and recommended therapy." One doctor suggested that such advice is "more valuable premortum than post-mortum."

2) "Interval progress-reports prior to discharge — suggested: weekly intervals."

3) Here is a suggestion from an Ann Arbor physician on physician relationships: "The entire Center would improve its relations if it were to cause leading physicians throughout the state to feel that they are a part of the Center by asking them to give lectures and clinical demonstrations, and asking them for advice rather than always giving it. Not all the medical brains are concentrated in the University Medical Center. Other universities have decentralized postgraduate education throughout the state, and in turn have asked leading physicians in those same areas to spend a day or

two making rounds and presenting lectures, allowing contact with doctors who are in active practice. Such an interchange would benefit both the Medical School and the University Hospital, and would certainly improve interprofessional relationships."

4) One internist is quite definite. He says: "Eliminate the derogatory term *LMD*, give the referring physician credit for some judgment, utilize the information from prior work-up of the case including laboratory data, improve communication with accent on promptness, and return the patient as every consultant should."

5) Not all is criticism. One respondent, for example, suggests that the referring physician himself may assist the patient by forewarning him of the probable impersonal relationship which is unavoidable in a large referral institution. Another suggests that the personal touch can best be maintained by referral to a specific staff physician, with a supplementary phone call. Another suggests much more comprehensive history accompany the patient.

6) One Ann Arbor physician especially notes the courtesy and assistance given by the Department of Pathology of the University Hospital, "always giving us the feeling that they are anxious to be of assistance at any time." Two surgeons dissent, however, stating that they never feel quite at home with either the senior or junior staff, like excess baggage in seminars and on ward rounds.

7) Another observer, this time an internist, adds this note: "There should be more use made of experienced men in private practice, with more lectures from them on practical aspects of practice and not only in general practice, but in the specialties also. The "block-externship" program is a step in the right direction." He adds: "New faces and viewpoints would greatly enhance the teaching program."

I am certain that the administration of the University Hospital, like the Medical School, is cognizant of these criticisms, and is attempting constantly to eliminate the defects.

I wondered about this matter of late reports, so I checked my own University Hospital referral reports last week. One new report is this one:

Dear Dr. DeTar:

Your patient,.., was discharged from the University Hospital today. In the interest of getting this information to you as promptly as possible we have chosen this type of letter to inform you that our discharge diagnosis is:..

After the results of the studies and examinations are available, we will send you a complete detailed report of our findings and recommendations. In the meantime, we have placed the patient on the following program:.......................

Thank you very much for referring this patient to us. Any suggestions which you may wish to offer will be most appreciated. If you need any additional information before you receive our complete report, do not hesitate to let us know.

Sincerely yours,
Department of ....
.... M.D.

This is a brief interim report, certainly one answer to the many requests for better communication. Five days later I received the detailed final report. So I cannot go along with those who hold the hospital responsible for making no effort at improved communication. The suggestion for interval reports on prolonged cases bears consideration. Likewise the suggestions to utilize outstanding clinicians from the field of private practice, and certainly the suggestion to induce the staff to withhold derogatory remarks about the infamous "LMD." Incidentally, these suggestions came from surgeons and internists, not generalists.

I was curious to know what techniques the administration and faculty utilize to pour oil on such troubled waters as those described, which must occur in all large institutions. So, I asked Dr. Kerlikowske and Dr. Nelson about these matters.

They told me that this new form letter mailed on the day of discharge is the result of the study of the Physicians' Relations Committee of the Junior Staff. An intern is fined $1 a letter for late mailing of reports. Accent is being placed constantly and continuously on the development of a proper attitude toward referring physicians. Every new intern and resident is exposed in an orientation class instruction by two physicians in private practice representing the Michigan State Medical Society. Such orientation and indoctrination is started early in the Medical School under the direction of Assistant Dean H. Waldo Bird who is in charge of student affairs. Such signs are salutary, and bid well for the future.

An Unexpected Answer

I have purposely reserved until the last some of the suggestions coming from this panel of correspondents specifically dealing with a phase of patient treatment far removed from the highly scientific spirit of today's medical care, whether that care be rendered in an office in the Fisher Building or in an office on Main Street, or in the wards of the University Hospital.

This phase lies in the realm of the spirit rather than the flesh. Rather than labeling it, I will give you just a few of the opinions expressed: opinions which cross over generously from patient to physician to hospital and back again.

A Detroit surgeon says: "The faculty teacher must use utmost care to demonstrate to the student that the patient is a human being and not simply a piece of teaching material — and so do we all."

An Ann Arbor internist adds: "Human kindness can't be taught. The personal approach in a large teaching hospital is difficult to acquire, but it should be sought."

A Flint surgeon and an Ann Arbor generalist both ask that resident physicians be given individual responsibility for over-all care of individual patients, to act as a personal physician to the patient while he is hospitalized, in order to accomplish two objectives: (1) to provide the patient with a single point of refuge, and (2) to develop in the physician in training the concept of treatment of the whole patient including his psyche, noting that the young physician is building his medical character as well as developing his technical skills. An Ypsilanti surgeon pleads for treatment of the patient instead of the disease.

An Ann Arbor physician calls for the substitution of human kindness for the arrogance he notes on the part of a minority of instructors, which he attributes to youth and institutionalization. An Ann Arbor generalist pleads for a bit of staff humility in the presence of what he terms a condition of relative ease of practice with unlimited consultation facilities.

This problem of infusing the spirit of human kindness into large institution trainees is not new to administrators and senior staff members. Nor is it confined to the University Hospital. Every large hospital has the same problem. Success is attained only with effort, and I have no doubt that effort is continuous.

Nor is the absence of the personal touch entirely new. Plato complained in these words: "For this is the great error of our day in the treatment of the human body, that physicians separate the body from the soul." Voltaire was a bit more spicy. He said: "A physician is one who pours drugs of which he knows little into a body of which he knows less."

One of our modern philosophers, Eduard Rist, puts it this way: "How many errors have been committed because the physician has not been able to discern, behind the masque of the invalid, a man." These are all simply different ways of saying that the sick person, whether in Plato's time, or in Voltaire's time, or in our time, values the treatment of his soul equally with the treatment of his body.

I was extremely interested in these answers to questions in no way designed to emphasize human qualities, compassion and kindness in the physician's relationship with the patient. The emphasis placed on the need for being human by so many of our correspondents points up the universality of the recognition by physicians of the necessity of this quality above all others. And it certainly applies equally to all of us, whether trainees, professors or private practitioners.

I, therefore, do invite the consideration of both teaching staff and trainees to these appeals, as being worthy of continuing attention.

I think you might be interested in a completely impartial point of view of what physicians expect of their medical centers. One of the staff of the AMA Council on Medical Education and Hospitals wrote this letter, which I found most enlightening:

"I think the medical profession outside of the University Hospital expects a number of quite conflicting things from the Medical School and its major teaching hospital The medical profession outside the Medical Center expects the Medical Center to be discharging effectively its functions in education, research and medical care. Yet it too often expects the relatively scarce and highly qualified medical personnel at the center to accept low incomes by refraining from any private practice that could in any way be considered competitive. It expects the center to be a court of high appeal for the solution of rare or difficult clinical problems referred to it and yet have predominately the usual and frequent clinical cases for its students. It expects productive research with emphasis on the scientific approach to clinical cases by the clinical staff of the center but expects also they will emphasize the "art" rather than the "science" of medicine in the educational program. The medical profession outside the medical center often expects a great deal of consultation service and medical care in the center, top notch educational programs at all levels, more and more continuing education for the surrounding profession, and yet expresses concern at the number of full time faculty personnel and the number of new graduates making a career of academic medicine in such a center. In short, because my colleagues in the medical profession are first human beings and second doctors of medicine, many of them would like very much to have their cake and eat it too."

Summary

The last question put to our panel of correspondents was just this: *"What do YOU and the physicians in your area expect of the University Medical Center?"*

I think I can sum up the replies of the majority in these quotes:

"Production of highly qualified physicians.
The ultimate in consultation.
Highly trained nurses.
Leadership in medical problems.
Understanding of physician problems.
A continuing of its high standards.
Close liason with the family physician.
Treatment of the referred patient primarily as a person rather than merely as a case."

President Harlan Hatcher, in addressing the Washtenaw County Medical Society, expressed his own belief that today's educational problems are far from static, and are changing constantly, when he said: "It is going to require the boldest kind of thinking to meet the problems facing education today." Personally, I have every hope — and confidence — that Dr. Hatcher's philosophy of education will dominate University Medical Center policy.

Conclusion

My own conclusion from this survey is this: That we have in the University Medical Center an institution of tremendous value to the people of Michigan and of tremendous help to the physicians serving them. We have the largest Medical School and the largest collegiate Nursing School in the country, together with a teaching hospital and faculty unsurpassed in excellence. As in all large teaching institutions, provision of conditions which will please all patients and all physicians is difficult. There is abundant evidence that administration and staff are constantly reappraising such conditions in an effort to improve them, and it is in the spirit of constructive suggestion that the opinions of these thirty-eight physicians throughout the state are transmitted. I believe I can repeat to you in all sincerity the last sentence in the little brochure describing the Center which reads: "The Medical Center is a priceless possession — and an indispensable servant — of the people of Michigan."

The whole life of man is but a point of time; let us enjoy it, therefore, while it lasts, and not spend it to no purpose.—*Plutarch*

A man should choose with careful eye the thing to be remembered by.—*R. P. T. Coffin*

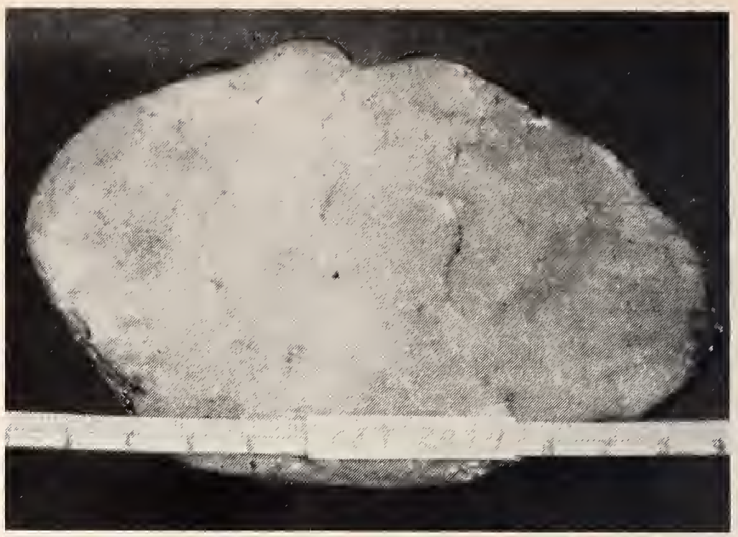

Fig. 1. Cut section of Brenner Tumor.

Brenner Tumor

report of case

Brenner tumors are rare. These tumors have no apparent endocrine influence and commonly are asymptomatic except where they achieve large proportions.

ANATOL LYSYJ, M.D.
WILLIAM SPELLACY, M.D.
Minneapolis, Minnesota

FRITZ BRENNER in 1907, described three cases of ovarian tumor and named it "oophoroma folliculare."[1] Since then it has been called various names including: fibroma papillare, superficiale carcinomatosum, folliculoma ovarii, pflugerome, epithelioma pflugerem, fibro-epithelioma mucinosum benignum, and Brenner tumor.[2] It is a rare ovarian tumor with only slightly more than 300 cases reported. It constitutes one percent of ovarian tumors.[3]

Clinically the tumor may occur at any age. More than 50 percent of all Brenner tumors have been reported in patients 50 years of age or older.[4] The tumor presents as any other solid pelvic mass and has no known hormonal activity. A number of cases are now recorded where the tumor was associated with endometrial hyperplasia and uterine bleeding, suggesting an estrogen hormonal influence, but none is proved as yet.[5, 6, 7] Meig's syndrome has been associated with this tumor.[2, 8]

The histogenesis of this tumor is intriguing. Brenner thought it was a tumor of the follicle and designated it "oophoroma folliculare." Robert Meyer believed they arose from Walthard rests, and undifferentiated cell rests of celomic origin.[9] These rests may be found in the superficial portion of the ovaries, and under the peritoneum of the Fallopian tubes and ligaments, especially in the newborn and young child.[7, 8] The nuclei of the epithelial cells show a characteristic longitudinal grooving or folding. This same type of nuclei occurs in the Walthard rests, and may indicate a line of histogenesis. This is not specific to the nuclei of these two cell types, but is more frequent here. The frequency of this specific nucleus pattern is variable, but such nuclei are usually more numerous at the periphery of cell cords.[10] Meyer's view of the histogenesis is difficult to prove, but is accepted by most writers today.[8]

From the Department of Obstetrics and Gynecology, Minneapolis General Hospital, Minneapolis, Minnesota.

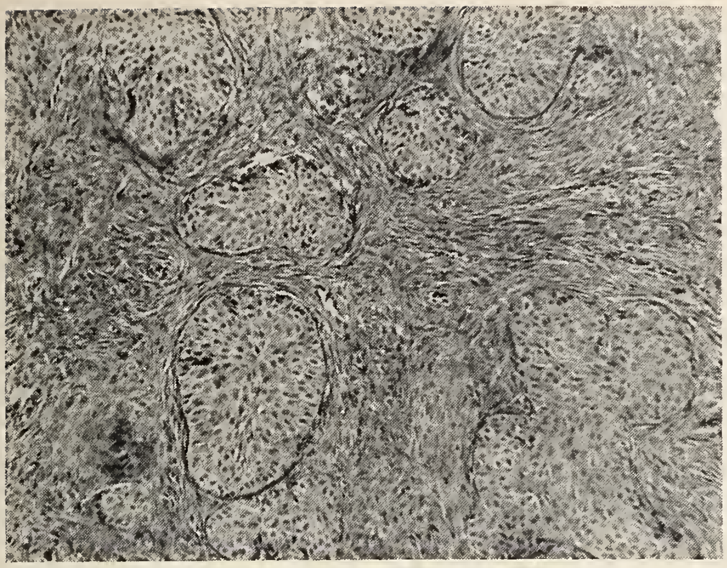

Fig. 2. Microscopic section of Brenner Tumor from the left ovary.

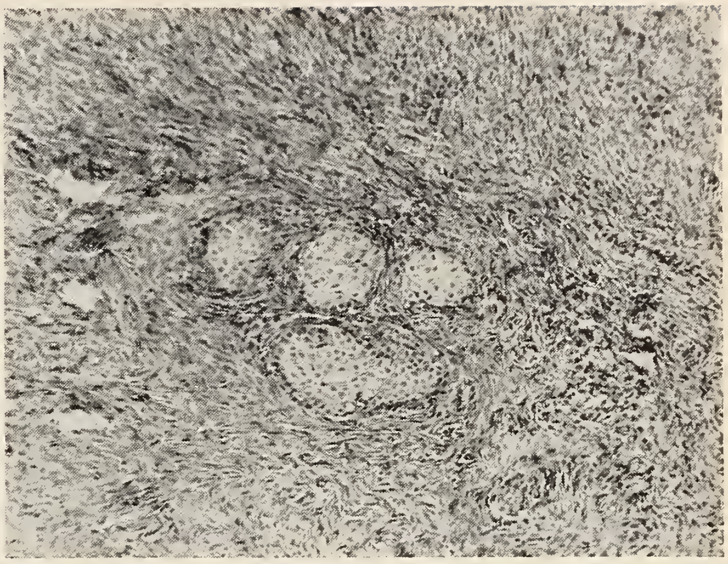

Fig. 3. Microscopic section of the right ovary showing Walthard's cell rests.

Pathologically, the size of these tumors varies greatly, from microscopic size to large tumors weighing over nineteen pounds.[11,12] About 7 percent of the tumors are bilateral.[13,14] This tumor occurs frequently in combination with other primary ovarian growths, especially pseudomucinous cystadenomas.[15, 16] Meyer believed a certain proportion of pseudomucinous cystadenomas have their origin in Brenner tumors. The tumors are of two kinds: 70 percent are solid, 30 percent are cystadenomas.[17] Grossly the tumor resembles a fibroma or thecoma, and may have a yellowish tint on cross section.[18, 19] Microscopically, there are nests of epithelial cells distributed in a fibromatous connective tissue network.[8] The epithelial cells are squamous-like, but they lack the kerato-hyaline granules and intercellulor bridges.[19] The secondary changes seen in these tumors are: (1) cyst formation, (2) malignant transformation and (3) calcification.[20] The cells lining the cysts may secrete a mucoid material and is thus the orgin for some pseudomucinous cystadenomas.

Until 1944, no cases of malignant Brenner tumors were recognized and now eleven cases have been reported. The malignancy may present as: (1) pure epidermoid carcinoma, (2) pure adenocarinoma or, (3) mixed type.[4, 21, 22] All cases of malignancy in the literature are postmenopausal, with ages ranging from 55 to 70 years. The treatment for the tumor is surgery.

Case Report

Mrs. A. C., #58800, a 35 year old married Negress, para 1-1-0-0, reported to the Outpatient Obstetrical Clinic on Oct. 27, 1959, for prenatal care. Her last menstrual period occurred on June 6, 1959. The periods prior to LMP have been regular and lasted usual 3 to 5 days. Because of four months amenorrhea, soreness of breasts, and occasional nausea, a pregnancy was assumed by the patient and by the referral physician, who, at the initial pelvic examination found a normal size uterus in anterior position.

The general physical examination revealed a well developed and well nourished, 209 lb. female in no distress. Her body build was of the strong, masculine, stocky type and there was a moderate degree of hirsutism of the face, especially the upper lip. The breasts were normally developed. The cardiovascular, respiratory, digestive, and urinary systems all showed normal findings and functions. The pelvic examination revealed a 10 cm. mass in the left adnexa. It was round, firm and was neither tender nor fixed.

Her past obstetrical history included one full-term delivery in 1950, and one stillbirth premature in 1950. Her first child died of unknown causes one hour after birth. The menarche began at age 9. The remainder of the past history was entirely negative. The laboratory findings included: Hgb. 13.1 gm.% WBC 3700 ^{60,37,1,2} urinalysis normal, sedimentation rate 43mm/hr., 17 ketosteroids 11.8 mgm./24 hrs. The Friedmann test was reported negative twice.

On Nov. 2, 1959 the exploratory laparotomy was performed. This revealed the left ovary to be occupied by a large 12x9x7 cm. mass weighing 270 grams, solid in consistency, smooth and pale on the surface. The right ovary appeared to be only slightly enlarged. The Fallopian tubes appeared normal. The uterus had several small myomas measuring up to 1 cm. diameter in size. A total hysterectomy and bilateral salpingo-oophorectomy was done.

The microscopic sections of the tumor revealed it to be composed of the fibromatous connective tissue surrounding nests of epithelial cells. These nests appeared to be either rounded or elliptical in shape, and were made up of large polyhedral cells with small nuclei. The cells were of uniform appearance. The gross and the microscopic appearance of the tumor was typical for Brenner's tumor of the ovary. The right ovary showed normal histological picture except one section in which four epithelial cell islands were found. These were diagnosed as Walthard's cells rests. The histologic sections of the uterus showed atrophic endometrium.

Summary

The report of one more Brenner tumor seems to be justified by the rarity of this condition. These tumors are known to be asymptomatic except in cases where they achieve large proportions. They have no apparent endocrine influence. This patient came to our attention only because of her assumption of being pregnant. Because of a very unfortunate obstetrical history of this patient and also because of her expressed intense desire to have an offspring the diagnosis of pseudocyesis was justified in this case. This would then explain all the subjective symptoms of pregnancy for which she sought medical attention.

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It is a true saying, that a man must eat a peck of salt with his friends, before he knows him.—*Cervantes*

Abstracts and Briefs

PREVENTION OF CANCER SPREAD

These authors have reviewed the record from Memorial Center on 607 "curative" gastrectomies for cancers over a twenty-eight year period. The records of all patients in whom a mass in the wound was reported were studied. Eleven were found, nine of which were considered as wound recurrence of the cancer. The incisional recurrent cancer first appeared from 2.5 months to 38 months after the gastrectomy.

In all cases the gastric tumor was extensive ulcerating adenocarcinoma, seven of whom had serosal invasion by the cancer, four had regional lymphatic involvement. None of the large lesions were transected through tumor. The recurrences were variously treated by excision, X-ray therapy and combination.

All nine patients with recurrent gastric cancer in the operative wound died of abdominal carcinomatosis in from three weeks to twenty-eight months after first evidence of the recurrence. Therefore, a very poor prognosis is evident.

The authors suggest the possibility of most effectively preventing contamination of operative site by cancer by destroying all viable free cancer cells within the lumen of the stomach before opening the g.i. tract. This, they suggest, might be accomplished with chemotherapeutic agents which are locally effective.

A less than 2% incidence of implantation in the wound, although small, indicates the value of adhering to the basic principles of cancer surgery. Future reports upon results of the authors' suggestions of intralumenal instillation of chemotherapeutic agents could possibly reduce the incidence of wound implantation and also, as suggested by the authors, a reduction in intraperitoneal implantation.

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Fortner, Joseph G., and Lawrence, Walter, Jr.: Implantation of Gastric Cancer in Abdominal Wounds. Annals of Surgery, 152: Nov., 1960.

SURGICAL FAILURE IN HERNIA

The authors feel that anatomists of the past produced clear and valid descriptions of the anatomy of the inguinal area but that present day understanding of this area is often faulty. They state that surgical methods based on incorrect knowledge of the anatomy produce a disturbing frequency of recurrence. The anatomy of the groin was studied, layer by layer, in 500 body-halves. Some of the findings are believed by the authors to be of significance in determining rate of recurrence after operations for inguinal hernia.

The feature of the dissection to which the authors call attention is that in the absence of a performed (indirect) hernia sac, the anatomy of Hesselbach's triangle, is the primary factor which determines resistance to herniation. They conclude that muscles and their aponeuroses, especially that of the transversus abdominis, are the most important. In 8 percent of specimens studied, the transversus layer was so weak as to be useless in hernia repair, and these the internal oblique muscle lay too high to reinforce the area. Hence in these specimens 9 percent had no musculo-aponeurotic barrier to direct herniation. The authors note that this percentage is similar to recurrence rates in many large series of hernia operations, predominantly of the indirect variety, and they conclude that this defect is the explanation for direct recurrence following simple indirect inguinal hernioplasty.

This very careful detailed study provides a vast amount of anatomical data. The authors did not attempt to give any recommendations as to actual surgery from this study.

What they did do was to point out that 8% to 9% of subjects had poor tissue in the floor of the inguinal canal. These individuals are very susceptible to direct inguinal hernia. We may infer that in the repair of indirect inguinal hernia, a technique such as that of Halstead or a Cooper's Siganent repair, which reinforces the floor of the inguinal canal or blocks an approach to the floor of the inguinal canal, of direct inguinal hernia later appearing after repair of indirect inguinal hernia.

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Minneapolis, Minnesota

Anson, Barry J., Morgan, Edward, H., and McVay, Chester B.: Surgical Anatomy of the Inguinal Region Based Upon a Study of 500 Body-Halves. SG & O 111: 707-725 Dec. 1960.

GRISEOFULUVIN DOSAGE CHANGE

Various schedules of therapy with oral Griseofulvin are compared in a group of 47 cases of tinea capitis due to Microsporum audouini. Twenty-two of these patients were given a single dose of three grams of Griseofulvin and followed thereafter for a month.

The control group of 25 cases was given one or more grams of Griseofulvin every one, two, or three days for a total of 28 days. The results in the single dose group were comparable to those of the controls, only one of the 22 patients failing to respond favorably.

These results, if corroborated, are significant for two reasons. First, with the long courses of daily medication now considered necessary for this chronic disease, patients sometimes cannot be depended on to continue treatment as directed. Secondly, this single dose course would represent a substantial financial saving, in view of the high cost of this new antibiotic.

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Minneapolis, Minnesota

Friedman, L., et al: Single Dose Therapy of Tinea Capitis. AMA Archives of Dermatology, 82 (3): 4/5-18, Sept., 1960.

INCIDENCE OF MALIGNANT "BENIGN" ULCERS

The five year survival rate in cancer of the stomach appears to have reached a plateau of 30 to 35 percent of those resected with hope of cure. The incidence in gastric ulcer has been estimated at five to twenty percent. X-ray diagnosis initially or to evaluate healing after medical trial may often be unavoidably wrong. Of patients surviving gastric cancer, as many as 70 percent may be in the group presenting as gastric ulcers.

The authors reviewed 106 cases of gastric ulcers diagnosed clinically as benign but which proved at operation to be carcinoma of the stomach.

Clinically, men outnumbered women four to one and most patients were in the 40 to 60 age group. Seventy-three percent of patients had typical ulcer history and 14 percent suggested it. Ninety percent had epigastric pain.

Diagnostic measures were evaluated. Gastric analysis was performed 101 times. Twenty-one had low or absent acids and, of these, only one third survived five years.

Gastroscopy was done 26 times in 19 patients and in five cases incorrect impression of benign disease helped delay the operation. Endoscopists feel the value of gastroscopy is limited. X-ray report suggested malignant lesion in 29 percent. Internists diagnosed possible malignant lesions in 17 percent. Even operating surgeons diagnosed 24.5 percent as benign at surgery. Fourteen patients showed false healing by x-ray while under medical management. Indications for surgery included failure of medical treatment for supposedly benign ulcer in 79, and suspicion of malignancy after medical trial in 18. In summary, they felt clinical diagnosis of the nature of these lesions left much to be desired.

Analysis of results revealed there were three deaths and two patients could not be traced. Ninety two were resected with hope of cure and 14 had lesser procedures for resectability rate of 86.8 percent. Of the 101 patients who survived operation and were traced, 85 had had trial of medical management. Of these, 69 were treated over three months and 30 of the 69 failed to survive five years. In patients resected with hope of cure, early resection produced 92.6 percent five year survivors, while in the group delayed for medical management the rate was 60 percent.

In recommending surgery one considers mortality, 2.8 percent in this case, and morbidity, which the authors do not consider an important factor.

If medical treatment is elected, only hospital treatment followed to the point of complete healing and frequent x-ray follow-up can protect the patient from a missed carcinoma. This is expensive and some patients will not be followed closely enough.

The authors present convincing evidence of the dangers of regarding gastric ulcers as benign lesions on the basis of the clinical evaluation. The most careful work up will fail to recognize some gastric carcinomas. When one considers that some carcinomas will appear to be healing under medical management and that delay reduces the rate of five year survival after resection, the difficulty of the internist increases. Cain found that in benign gastric ulcers treated medically, 80 percent continued to have symptoms and 38 percent required operation eventually. Resection has produced a very high incidence of excellent results in benign gastric ulcers. Reviewing all the evidence, it seems clear that prompt surgery is the most conservative treatment for the patient found to harbor an ulcer in the stomach.

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Brown, P.M., Cain, J. C. and Dockerty, M. B.: Clinically "Benign" Gastric Ulcers Found to be Malignant at Operation. SG & O, 112:82-88, Jan. 1961.

FLUORESCEIN CANCER DIAGNOSIS

A histochemical method which distinguishes between normal and malignant cells in studies of various thyroid gland abnormalities is reviewed. As in previous work upon experimental rat hepatoma when fluorescein isocyanate is used, the differential staining appears to depend upon protein to protein interaction with the tumor cells having lost their organ antigens, presumably as a reflection of an altered cytoplasmic protein spectrum of the cell.

Fresh unfixed biopsy material was used from both human tissue in the operating theatre and thyroid tumor induced rates. After staining of the frozen section, a process of about twenty minutes time, the tissue was examined with a Leitz fluorescence microscope.

The normal thyroid gland emitted green fluorescence by the cytoplasm of the epithelial cells lining the acini. The same cellular affinity was observed in all other nonmalignant conditions including colloid goiter, the hyperplastic cells of thyrotoxicosis, fetal adenomata and cellular adenomata.

All cases of carcinoma of the thyroid gland, both primary and secondary, including the well differentiated papillary adenocarcinomas, fail to show any dye pickup.

The failure of the colloid adenomatas to behave like neoplastic tissue in their opinion supports the view that the colloid adenoma is not neoplastic.

This procedure would appear to have great promise as an aid of very practical value in cases of the thyroid tumor wherein standard, quick-frozen sections give considerable difficulty to the pathologist in making a conclusive histologic diagnosis. The surgeon might thus be able to avoid the second stage procedure for malignancy if the problem can be accurately settled at the time of primary operation.

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Louis, C. J., and Varasdi, G.: Fluorescein-Protein (Globulin) Affinities of Tumors of the Thyroid Gland. Annals of Surgery, 152: Nov., 1960.

DIAGNOSIS OF MELANOMAS

Melanocarcinoma (malignant malenoma), one of the more lethal types of malignancy known, occurs not only in adults, as was generally believed up to a decade ago, but also in children before puberty. Juvenile melanoma is a benign lesion, resembling melancarcinoma clinically and microscopically, but with no greater vulnerability to cancerous transformation than any other compound nevus.

It is now recognized that these lesions occur in adults as well as children, the oldest mentioned in the present paper being a 56-year-old woman.

Distinction between the two types of lesions is based on histopathologic features rather than on clinical findings emphasizing the importance of biopsy in the management of pigmented lesions. The microscopic criteria for distinguishing between the two types of lesions are discussed in some detail.

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Minneapolis, Minnesota

Allen, A. C.: Juvenile Melanomas of Children and Adults and Melanocarcinomas of Children. AMA archives of Dermotology, 82 (3): 325-335, Sept. 1960.

President's Letter

OUR CHANGING PROFILE

"If you doctors think you're perfect, you ain't." These words of warning uttered by a prominent United States Senator were heard at the recent Medical Legislative Conference held under the auspices of the American Medical Association. It was one of many similar statements made at that meeting by lay and professional people alike; statements based on their knowledge of us, gained by personal contacts, or in dealing with our organizations. It brings to the fore reasons for the changing profile of the American Physician.

Like a well-known advertised product "which is like a doctor's prescription," so the modern doctor is like many different personalities to many people. The profile of the family doctor, little black bag in hand, walking through the snow in the middle of the night to bring solace to the ill, is being replaced by the modern physician, clothed in the enormous complexities of present-day medicine, trying to use the reservoir of present day advances to the best interest of his patients. He finds that no one doctor can hope to master it all. This human limitation in skills has made the physicians of necessity dependent on each other. Furthermore it has shifted the care of the sick from home; to office; to clinic; and/or to the hospital.

Of necessity, it has created specialties and sub-specialties. In turn, the patient expects and demands the best care that is available. He finds in so doing, however, that he strains the traditional doctor-patient relationship, so essential for good medical care. While he wishes to retain this old-fashioned cordial relationship, he demands the time-consuming impersonal results of the test-tube held in the hands of the over-worked physician.

As physicians, we face a crisis in human relations when we place the results of the laboratory menu ahead of the old maxim, that, "The care of the patient begins with caring for the patient." There recently appeared the following statement in an article in one of our better non-fiction magazines: "The patient's sense of unrequited love reflects a major failure of modern medicine which is even a more wide-spread source of discontent than its high cost."

The modern day stresses of living have made necessary more understanding of the problems of our patients, and accentuates their need for guidance. It is paradoxical that as modern sciences create these modern miracles in cures, the present-day patient needs and seeks more rather than less personal attention from us.

There is another factor that is changing our profile. Another prominent speaker at the conference stated that "Doctors are Citizens too." Busy as we are, he insisted, all of us must take the time to assume other obligations of citizenry beside doing our job and paying our taxes. We should not come forward only when political solutions which affect us are proposed, but should be interested in all facets of local and Federal government that make for freedom of thought and performance.

At the conference we were told "You can stay out of politics, but you can't keep politics out of your business." We must prove to the public that the private practice of medicine is the best solution to the medical needs of our generation. Many forces are promoting socialistic answers to the questions of medical care for the aged at the present time. These forces, however, can not be successful without the support of the general public. We must influence the public not to give that support by giving them the true picture of the present needs. We must sell them our medical care package, and in doing so, we ourselves must know what's in it. We have a good medical care package to offer to the public. We cannot allow the political opportunist to promote and sell a package which is not in the best public interest.

The majority of the public is aware that American Medicine is the best in the world. In presenting our medical care package, tell them what makes it so. The medical profession has never denied care to those in need. It has always adjusted its economics to the abilities of the near-needy to meet their obligations.

We favored the passage of the Kerr-Mills Bill which helped to further implement that medical service. That bill is now the law of the land. Let us insist it be given a chance to prove itself. If you thoroughly acquaint yourself with its provisions, you will realize that it does not represent a retreat from our principles. The fact that opponents of this law continue to assail its provisions is sufficient proof of its merit. Remember, the most important ingredient of our medical care market basket is still the patient-physician relationship. Remember also that the public's profile of the physician, whether true or false, controls his belief in our profession. Thus his belief in us, and his understanding of our principles, is the force that can quit the talk of government medical care. Remember, "The service you render is the rent you pay for the space you occupy."

C. L. Oppegaard

President, Minnesota State Medical Association

Editorials

DEAR BRUTUS

"I shall try to correct errors where shown to be errors, and I shall adopt new views as fast as they shall appear to be true views."

Abraham Lincoln

A man always has two reasons for doing anything—a good reason and the real reason.

J. P. Morgan

The fault, dear Brutus, is not in our stars, but in ourselves.

Shakespeare

EIGHT GOATS, THREE APPLES

If you add eight goats and three apples and Wednesday, the total is 12, and with two pins, 14, making 78 per cent organic, 14 per cent metalic, and 7 per cent transcedental (nonhomeostatic). More careful analysis makes it 7.2856 per cent. These naive operations are often mistaken for statistics, when of course they are numerology. Not that numerology is a harmful pastime in itself; but if conclusions are drawn from the numbers instead of the necessary thought, one may be gravely misled concerning the virtues of a therapeutic measure, the presumed actions or side actions of a drug, or the quality or costs of medical care. Our favorite is the survey showing that Vassar graduates have 2.3 children, Harvard graduates 1.8 children, proving that women have more children than men.

It is less comical if the raw numerical diagnoses of the hospital record room are processed by machine, without the intervention of painstaking (human) clinical insight for distinguishing the apples and goats, and from this "information" it is judged that Brown orders a fearful lot of transfusions and Black is often bemused by nonappendicitis. It is not comical but weird if the words for many symptoms and signs are compiled and stored in a computer, so that a bright young clerk need only press the right keys for the words being spoken and out will come a "diagnosis," or a schedule of lab work to be initiated forthwith that will decide the "diagnosis." An extraordinary danger is present, not in machines as such, but in the naivete.

The combination of naivete and foregone conclusions is a powerful one. In at least one recent inquiry into hospital costs they discovered that it was the physician who decided a patient should be admitted and how long he should stay; as a mechanic would say, There's your trouble right there.

But before deciding definitely that it is the length of stay in the hospital that causes all the financial trouble, it might be well to study another report (in Hospitals, May 16) showing that, all things being equal, a short hospital stay doesn't reduce the costs for all.

And as to numerology in clinical trials . . . it is a vast and benighted field. Statistics require the application of a good, hard thought, well before the accumulation of data but numerology does not, and a machine or even a horse can do it. But if a man claimed he had a highly authoritative horse—people would laugh.

MEDICAL TRIBUNE

EMOTIONAL FACTORS IN CORONARY OCCLUSION

CONCLUSION

"Yesterday is but today's memory and tomorrow is today's dream." If I were to project my dream of today into the future, I would see the time when coronary disease would be, as in the days of the past, a medical rarity. The medical journals would write about the decline of a transitional disease in the history of man — coronary occlusion, for it does seem to be a disease related to the cultural, economic, social and emotional stresses of our modern environment.

How is my dream to become tomorrow's reality? It would seem that with the continuation and further development of the curricula in medical education, we can expect to encounter young physicians who have been thoughtfully trained in the psychosomatic approach to illness. Only when the physician understands the patient as a human being, not just a coronary case, can we make any real progress in preventing and curing heart disease. There is undeniable evidence that the emotional life of the patient, past and present, has a potent part in the onset, recovery and recurrence of most heart attacks. When every physician recognizes that truth and integrates it into his therapeutic approach to heart disease, he will discover that the recognition and evaluation of his patient's emotional needs can be as useful a tool to him as digitalis.

Furthermore, with the entrance of the psychoanalytically trained psychiatrist to the team of those doing cardio-vascular research, this appreciation of the person in the patient is being transformed into a precise science of human psychodynamics. Emotions and conflicts, conscious and unconscious are measured qualitatively and quantitatively, subjectively and objectively, and hypotheses relating emotions and their effect upon the heart are subjected to predicton and validation by the scientific method. The psychoanalytically trained investigator together with his colleagues in other fields of medicine — helps to bridge the chasm in clinical research which has suffered in its lack of understanding of the whole person because of the previous inability to accurately describe and evaluate the unconscious. For without the inclusions of the observations of the dynamics of the personality (conscious, preconscious, unconscious) any study which attempts to correlate body changes and behavior would be redundant, as it is now, with further precise observations of irrelevancies.

Those engaged in the study of emotional aspects of coronary occlusion must continue to refine the behavorial observations and make specific dynamic formulations which then must stand the test of time and validation. These formulations must fit the (patho) physiologic changes of the organ involved. Only then can we begin to correlate the physiologic and psychologic aspects of the individual under observation. With such knowledege, one should be able to predict with reasonable certainty which patients will make a normal recovery from their coronary occlusion and those who will suffer delay because of their unconscious needs. Furthermore, and this is most important in the areas of public health and preventive medicine, similar studies can be made on healthy persons and the probability of their having coronary disease can be predicted. Prediction studies thus far chiefly take into consideration the physical factors of those being observed, (i.e. height, weight, cholesterol levels, diabetes, etc.).

It is conceivable that through the knowledge of constitution, biology, physiology and psychic function, one could prevent disease from happening on a large scale. Certainly labor, business, government and the professions would stand to gain immeasurably by saving their men from falling victim to a disease that they may have helped to create.

To predict the psychical and emotional status of healthy individuals as a method of preventing heart disease, the "punch biopsy" technique in addition to other observations can be used. As explained in my second article, by punch biopsy of the unconscious, we refer to that technique whereby a skilled observer can become informed of the status of the observed's psyche, without endangering the status quo of the psyche under evaluation. Thus, through predictive studies, coronary disease prone persons could be protected from heart disease through preventive medicine. As Freud stated, suffering comes from three quarters: from the body, the outer world and from our relations with other people. Relief of suffering comes best by influencing the organism itself.

In the immediate future, however, the physician can treat his patient most effectively, in the areas of recovery and rehabilitation. This can be done through the recognition and implementation into his therapy, his comprehension of the importance of the role of the emotions in the coronary patient. Even now, it is possible to take a punch biopsy of the unconscious of a patient with coronary occlusion immediately after the initial shock period has passed. Prophylaxis and therapy can be instituted at this time. Physicians should be educated and encouraged to work with patients in this area, and even to consult with or engage outright psychiatrists to work with them, as a matter of routine practice.

The face sheet of every medical chart should have, even now, a flow chart that will plot the intellectual, emotional and personality status of a patient, just as one plots the temperature, pulse, respirations and other pertinent data. At a glance, the informed physician can tell the emotional status of his patient and can daily watch for progression or regression of that status, as the patient's psychologic adaptation to his disease takes place. Is the patient accepting the reality of the attack, but finding the threat to his life overwhelming, is the patient showing signs of depression or over-dependency, is the patient rejecting the reality of the attack, employing denial as a defense mechanism, and beginning to take on physical activities in the hospital which are directly in opposition to his physician's orders? Is a change of personality taking place within the patient, did he accept the reality of his attack when he was in an oxygen tent, only to show signs of denial of his illness and irritation at his restrictions as soon as he began to feel a little better. All of this information, which is so vital to the patient's recovery and rehabilitation, can and should be charted graphically on a flow chart, recognition of a change noted, and treatment instituted immediately. Post-coronary psychologic invalids should be encouraged to seek aid at once in order to reduce the alarmingly high incidence of cardiac neurotics, and hasten their gradual rehabilitation and a resumption of a normal healthy life. Through further research and validation of the role that emotions play in coronary disease, and through the education of all of our physicians to these better methods of treating this disease, coronary occlusion may well be noted in medical history as the transitional disease of the Twentieth Century.

BARNEY M. DLIN, M.D.
Philadelphia, Pennsylvania

Ref.: Emotional Factors in Coronary Occlusion—A Research Study by Department of Medicine and Psychiatry, Temple University Hospital and Medical School. Doctors Weiss, Edward (deceased), Dlin, B., Fischer, H. K., Winters, Wm., Hagner, S., and Russell, G.

CUSHING'S SYNDROME

Cushing has three different syndromes dedicated to his name, number one, two and three.

Cushings' syndrome No. I is the multiglandular disorder ascribed to the symptom complex of a basophilic adenoma of the pituitary. This occurs most frequently in women and can be recognized in early life. The symptoms consist of fatigue, weakness, weight gain, nervousness, irritability, depression, amenorrhea or menstrual irregularity. Hircutism and male distribution of pubic hair, acne, a moon shaped face, buffalo hump, hypertension and a mild insulin resistance diabetes are among the prominent signs and symptoms.

Cushing's No. 2 syndrome provides the signs and symptoms caused by involvement of the posterior lobe of the cerebellum. There is tinnitus, deafness, disturbance of labyrinthine function, hyperesthesia of the face and diminished corneal reflexes. A tumor in the region of the fifth, sixth, seventh and eighth cranial nerve is the most common cause.

Cushing's syndrome No. 3, the chiasmal syndrome, is that of bitemperohemianopsia and associated optic atrophy. As the condition fully develops, there is progressive failure of vision.

Robert H. Durham

Annual Meeting Preview

Members of the Minnesota State Medical Association and their wives will meet in St. Paul May 22, 23, and 24, for the 108th Annual Meeting of the Minnesota Medical Association.

Scientific sessions of the three-day meeting will begin Monday, May 22, at 9 a.m. in the St. Paul Auditorium. These sessions will feature lectures and demonstrations by noted medical specialists on the latest advances in medical science and techniques. There will be demonstrations on obstetrics and cardiac arrest, as well as films on such topics as blood fractions, arthritis, and rheumatism, and civil defense. In addition, there will be symposiums, round table discussions, and a series of breakfasts and luncheons for members of various medical specialties.

Physician-prepared scientific exhibits representing almost every phase of medicine will be on display in the St. Paul Auditorium and there will be recess periods twice daily to enable the doctors ample time to view the displays. The individual physician presenting the most outstanding exhibit will receive a medal from the Southern Minnesota Medical Association at the Annual Banquet, Tuesday, May 23, 7 p.m. at the St. Paul Hotel. Also on display will be a number of informative exhibits prepared by Northwestern public service organizations. An almost record number of technical exhibits by both state and national pharmaceutical and medical supply firms will be presented.

Another award to be made at the Annual Banquet will be that of lapel buttons and certificates of election to the Fifty Club to Minnesota State Medical Association members who have completed 50 years of medical practice.

Featured speaker at the Annual Banquet will be Mr. Chester Lauck, executive assistant for Continental Oil Company, and a director of the American Capitol Life Insurance Company.

To anyone who listened to radio between 1933 and 1954, Mr. Lauck is better known as the Arkansas storekeeper "Lum," who with his partner, "Abner," ran the "Jot 'Em Down Store," which was richer in wit than profit. "Lum and Abner" was the Mutual Radio network's first show, the first network broadcast from Radio City, the first marathon charity broadcast, and the first international broadcast by a radio team, the show being produced both in London and Chicago.

Mr. Lauck will address the Annual Banquet on the topic of "Socialized Medicine," a theme which he has presented at countless meetings and conventions throughout the nation.

Dr. Edward R. Annis, Miami, Florida, surgeon who has become nationally known through his television debates on the subject of financing health care for the aged, will be the honored guest at the Annual Banquet and the New Members and County Officers and Delegates Dinner on Sunday, May 21.

As unofficial spokesman for the nation's doctors on the question of national health insurance, Dr. Annis has had national television debates with such articulate speakers as Walter Reuther, President of the United Auto Workers, and Minnesota's Senator Hubert Humphrey. On one occasion he simultaneously debated both Senator Jacob Javits (R-N.Y.) and Senator William Proxmire (D-Wis.).

Dr. Annis, who in 1958 was awarded the Brotherhood Medal by the National Conference of Christians and Jews, will be in the Twin Cities for the duration of the Annual Meeting, and will appear before groups other than the Minnesota State Medical Association.

"Medical Economics" will be the topic of the Annual Meeting's final session, Wednesday, May 24. Highlighting this session will be an address by the Honorable Elmer L. Andersen, Governor of Minnesota, and a debate on the question of medical care for the aging between Mr. Morris Hursh, St. Paul, Commissioner of Public Welfare, and Mr. Ernest B. Howard, Chicago, Assistant Executive Vice President of the American Medical Association.

Medical Economics

Edited by the
Committee on Medical Economics
Minnesota State Medical Association
GEORGE EARL, M. D., Chairman

INFORM YOURSELF AND OTHERS ABOUT PROPOSED SOCIALIZED MEDICINE LEGISLATION

It is vital that the medical profession exercise every means to bring about the defeat of health care for the aged through the social security mechanism as proposed in the President Kennedy supported King-Anderson Bill. The success of the Minnesota State Medical Association or the American Medical Association in defeating the Kennedy supported legislation will depend upon how much the individual physician is willing to do. It is already evident that the politicians are making an all out effort to insure the passage of socialized medicine legislation. Every member of the Minnesota State Medical Association must exert every effort to defeat it. Because the push for this type of legislation will be considered as high priority for the next three years, including the next presidential election year, all members are urged to acquaint themselves with the following detailed American Medical Association analysis of the King-Anderson Bill. A knowledge of this information will also be valuable when informing other persons who are not members of the medical profession.

On February 13, 1961, Congressman Cecil King (D) California, introduced H.R. 4222, and Senator Clinton P. Anderson (D) New Mexico, and eleven other Senators, introduced S. 909 in the 87th Congress. These identical measures implement the aims of the Kennedy Administration as outlined by the President in his message to Congress.

The Health Insurance Benefits Act of 1961, H.R. 4222, would provide for payment for hospital services, skilled nursing home services, and home health services furnished to aged beneficiaries under the OASDI Program, and for other purposes.

This bill would amend the Social Security Law by adding a new title (XVI) under which inpatient hospital services, skilled nursing home services, home health services, and outpatient hospital diagnostic services would be provided to any individual over age 65 who is entitled to monthly insurance benefits under Title II of the Social Security Law or under the Railroad Retirement Act, whether or not they are receiving them.

The bill would provide for the payment for the following limited services: Only 90 days of inpatient hospitalization in semiprivate accommodations (two-, three- or four-bed) subject to a deductible of $10 for each of the first nine days of hospitalization, with a minimum deduction of $20;

Only 180 days of skilled nursing home services, but the combined inpatient hospital services and skilled nursing home services could not exceed 150 units of services furnished during a "benefit period;"

A maximum of only 240 home health service visits during a calendar year;

Limited outpatient hospital diagnostic services which would be subject to a deductible of $20 for each complete diagnostic study; and

A "unit of service" would be equal to one day of inpatient hospital services or two days of skilled nursing home services. Thus, an individual who remained in a hospital for 90 days would be eligible for an additional 120 days of skilled nursing home care after his hospitalization.

"Inpatient hospital services" would consist of bed and board, nursing and related services, use of hospital facilities, medical social services customarily furnished by the hospital, and such drugs, biologicals, supplies, appliances and equipment for use in the hospital furnished by the hospital for inpatients, diagnostic and therapeutic items or services furnished by the hospital or by others under arrangements with the hospital for its patients. It would not include medical or surgical services provided by a physician, resident or intern, except in the fields of pathology, radiology, physiatry, or anesthesiology. However, it would include all types of service rendered in the hospital by an intern or resident-in-training under an approved teaching program. Inpatient hospital services would not include services of a private duty nurse.

"Skilled nursing home services" would mean services by a skilled nursing facility, after transfer from a hospital, and would include nursing care provided by or under the supervision of a registered professional nurse or a licensed practical nurse; bed and board; physical, occupational or speech therapy; medical social services; drugs, biologicals, supplies, appliances, and equipment which are furnished for use in the facility and such other services necessary to the health of the patient as are generally provided by skilled nursing facilities.

"Home health services" would be those furnished to an individual who is under the care of a physician by a home health agency under a plan established and periodically reviewed by a physician under which the following services are provided in the individual's home; part-time or intermittent nursing care provided by or under the supervision of a registered professional nurse, physical, occupational or speech therapy, medical social services, part-time or intermittent services as prescribed in regulations, medical supplies (other than drugs and biologicals) and appliances, and such other services necessary to the health of the individual as may be permitted in regulations.

"Outpatient hospital diagnostic services" would be those services which are furnished to an individual as an outpatient by a hospital or by others under arrangements with them made by a hospital which are customarily furnished by a hospital to outpatients for the purpose of diagnostic study.

Note: **Services provided by a nursing home, home health agency, or outpatient department of a hospital could not include services for which payment would not be made to a hospital.**

"Drugs and biologicals" would include only drugs and biologicals as are included in the U.S. Pharmacopoeia, National Formulary, or New and Non-Official Remedies.

A "benefit period" would correspond to a spell of illness and would begin on the first day the individual was hospitalized. A new benefit period could not begin until 90 days after the last day the individual was an inpatient in a hospital or nursing home.

Inpatient hospital services, outpatient hospital diagnostic services, and home health services would be financed beginning October 1, 1962. Skilled nursing home services would be financed beginning July 1, 1963.

The bill would declare it to be the policy of Congress that skilled nursing home services would be utilized in lieu of inpatient hospital services where skilled nursing home services would be sufficient.

Services would be provided only by written request filed by the individual (unless impractical) and only if certified in writing by a physician that the services to be financed are medically necessary. Recertification of the need could be provided for in regulations. The need for inpatient hospital or nursing home services in excess of 30 days would have to be reviewed by a "hospital utilization committee" or "nursing facility utilization plan," as the case may be, as required in the bill. The individual would have the right to have payment made to any provider of authorized services who has made an agreement under the bill and who agrees to provide the services. The bill provides for a hearing for any individual who is dissatisfied with a determination denying him entitlement to payment of any or all of the authorized services.

Payment for services would be based on the "reasonable cost" of services and regulations would prescribe methods of determining costs. Payment would be made to the providers of services at such times as the Secretary deems appropriate. No payment would be authorized to any federal hospital unless is determined by the Secretary as providing services to the public generally as a community hospital, nor would payment be made to any hospital which is obligated by law or contract with the U.S. to render services at public expense.

The Secretary would be authorized to pay any institution or agency which he determines is a hospital, skilled nursing facility or home health agency if it files with the Secretary an agreement not to charge any individual or other persons for services for which the individual is entitled to have payment made or will make adequate provision for return of any moneys incorrectly collected from the individual. Under the agreement the provider of service would be authorized to charge for any of the deductibles provided by the bill or in the case of an individual who asked for more expensive accommodations or services than authorized. The providers of services could be represented by an individual, association or organization. Such an agreement could be terminated by the provider of services after notice to the Secretary and to the public as may be provided in regulations. The Secretary could terminate such an agreement after notification when he has determined the provider is not complying substantially with the provisions of the agreement or with the provisions of the bill and regulations or no longer substantially meets the definition of a provider or when the provider has failed to provide such information as the Secretary may require to determine whether payments are due and the amount thereof or has refused to permit examination of its fiscal and other records by the Secretary as may be necessary to such information. Where an agreement has been terminated by the Secretary a new agreement could not be filed unless the Secretary finds that the reason for its termination has been removed and there is reasonable assurance that it will not recur.

The Secretary is authorized to make payments to a hospital which has not made an agreement with him if the services are of an emergency nature and are of the type for which the Secretary would be required to pay but such payment would be only for the reasonable cost of the services provided and then only if the hospital agrees not to charge the individual except for the amount of any deductible.

The bill contains a prohibition against interference by any federal official with the practice of medicine or in the selection, tenure or compensation of any provider of service or to exercise supervision or control over the operation of any provider of service, except as specifically provided.

Definitions

A "hospital" would be an institution which: (1) is primarily engaged in providing by or under the supervision of physicians or surgeons diagnostic services and therapeutic services, for surgical or medical diagnosis, treatment and care of injured, disabled or sick persons, or rehabilitation facilities and services for the rehabilitation of injured, disabled or sick persons; (2) maintains adequate medical records; (3) has by-laws in effect with respect to its staff of physicians; (4) continuously provides 24-hour nursing services rendered or supervised by registered professional nurses; (5) has a "hospital utilization committee" or, if such committee is impractical because of the size of the institution, meets such other requirements as may be prescribed to accomplish the purpose; (6) is licensed by a state or local law (if any) or is a public institution; and (7) meets such other conditions of participation as the Secretary may find necessary.

A "skilled nursing facility" means an institution or a distinct part of an institution which: (1) is primarily engaged in providing skilled nursing care and related services for patients who require planned medical or nursing care or rehabilitation services; (2) has medical policies which are established by a group of professional personnel, including one or more physicians to govern the services the facility provides, and which include a requirement that every patient must be under the care of a physician; (3) is under the supervision of a physician or a registered professional nurse who is responsible for the execution of the medical policies; (4) maintains adequate medical records; (5) provides 24-hour nursing service rendered or supervised by registered professional nurses or licensed practical nurses; (6) operates a nursing facility utilization plan; (7) is licensed under state or local law (if any); and (8) such other conditions as the Secretary may find necessary in the interest of health and safety of inpatients.

A "home health agency" would be an agency which: (1) is a tax exempt public or private nonprofit organization; (2) is primarily engaged in providing skilled nursing or other therapeutic services; (3) has medical policies established by a group of professional personnel, including one or more physicians, to govern the services it provides; (4) maintains adequate medical records of services rendered; (5) is licensed under state or local law (if any) or is a public agency; (6) meets such other conditions of participation as the Secretary may find necessary in the interest of the health and safety of the patient.

As to other conditions that would have to to be met by providers of service, the Secretary would be required to consult with the Health Insurance Advisory Council established by the bill, appropriate state agencies, and recognized national listing or accrediting bodies. He would be authorized at the request of a state to provide higher requirements for providers of service in that state than for providers in other states.

Note: An institution or agency primarily for the care and treatment of tuberculosis or mentally ill patients would not qualify as a hospital, skilled nursing facility or home health agency.

The term "physician" would also include an osteopathic practitioner legally authorized to practice surgery or medicine by the state in which he performs his services.

A "hospital utilization committee" would mean a committee composed of physicians or of one or more physicians and other professional personnel which reviews from the standpoint of the necessity therefore, admissions into, duration of stays and the services furnished by a hospital.

A "nursing facility utilization plan" would mean a plan developed by or for a skilled nursing facility which provides for the review from the standpoint of the necessity therefore, of admissions into, duration of stays and the services provided in such skilled nursing facility and which is approved by the public health authorities of the state in which the facility is located or by the Secretary.

The Secretary, through agreements, could utilize the services of state health agencies or other appropriate state agencies to: (1) determine whether an institution is a hospital, skilled nursing facility or home health agency; (2) determine whether a plan developed by or for a skilled nursing facility is a nursing facility utilization plan; or (3) provide consultative services to institutions or agencies to assist them to qualify as a provider of service, to establish and maintain necessary fiscal records and to provide information which may be necessary to determine whether payments are due and the amount thereof. The state agency would be reimbursed for the reasonable cost of services. The Secretary would also be authorized to treat an institution accredited by a national accreditation body as meeting the requirements of the bill.

To advise the Secretary on matters of general policy in the administration of the program and in formulation of regulations there would be created a 14-man Health Insurance Benefits Advisory Council, at least four of whom would be persons outstanding in the fields pertaining to hospitals and health activities.

The bill would also increase the maximum cash primary benefit under Title II from $127 per month to $130 per month. The maximum family benefits would be increased from $254 to $260 per month.

Social Security Tax Schedule

To meet the cost of the health program and increased benefits, the wage base subject to social security taxes would be increased in 1962 from $4,800 to $5,000. The tax rate would be increased at the following rates:

	Self-Employed		Employee-Employer (each)	
	Present	Proposed	Present	Proposed
1962	4½%	4½%	3 %	3 %
1963-65	5¼%	5⅝%	3½%	3¾%
1966-68	6 %	6⅜%	4 %	4¼%
1969 & Thereafter	6¾%	7⅛%	4½%	4¾%

(To be concluded next month.)

The Art of Medicine

PR

Carl H. Woyke
Editor

HELP WANTED:

To Promote "Babies and Breadwinners" Polio Protection Program in Minnesota Members of the Minnesota State Medical Association are urged to participate in the 1961 "Babies and Breadwinners" Polio Vaccination Program.

The campaign is designed to encourage local community drives aimed at reaching the lower socio-economic and younger age groups at the neighborhood level.

The all-out drive to encourage more people to get polio inoculations is being promoted by the American Medical Association, the United States Public Health Service and the National Foundation.

The 1961 Polio Vaccination Program is directing special effort toward low income groups not normally reached by private physicians in their offices or even through special polio clinics. A new approach to the problem is proposed in the "Babies and Breadwinners" campaign plan, which carries specific suggestions for organizing local polio drives. These local campaigns should be the joint effort of medical societies, boards of health and voluntary health agencies. The campaign should be launched immediately so that everyone can receive at least three shots before the summer polio season.

The Advertising Council of New York under the sponsorship of the A.M.A., U.S.P.H.S. and National Foundation has volunteered its services in launching another national polio promotional campaign. So far as possible, local campaigns should be tied in with this nationwide effort.

The key to success in the 1961 vaccination program will be activity on the local level, and such activity must have medical leadership if it is to achieve its ultimate goal of polio vaccination for all persons over forty.

The A.M.A., in a resolution passed by the House of Delegates in December, is again urging the medical profession to cooperate fully in a renewed campaign during 1961 with the U.S. Public Health Service and National Foundation to stamp out paralytic polio.

The A.M.A. resolution reads: "In view of the fact that oral polio vaccine will not be generally available in sufficient quantity in 1961 for any large scale immunizing effort, the Board of Trustees of the A.M.A. strongly recommends that the medical profession encourage the widest possible use of the Salk vaccine . . . and since many segments of the population are not immunized against poliomyelitis every effort should be made to encourage the general public to take advantage of the Salk vaccine without delay."

Last January the Surgeon General's Committee on Poliomyelitis Control met in Atlanta, Georgia, to advise the Surgeon General on the means for carrying forward the fight against polio. Here are the goals and priorities for the 1961 program as developed by the committee:

Every person should be fully immunized against polio.

> The first priority groups to receive "complete and early coverage" should be infant and pre-school groups under six years of age. Other children under ten and parents of young children comprise the second priority group.
>
> Community-sponsored polio immunization programs should be planned and carried out in close cooperation with local medical societies.
>
> These are suggestions for getting started locally as outlined in the "Babies and Breadwinners" blueprint.

1. Call a meeting of your local medical society and plan to work with the health department.

2. Arrange another meeting of community leaders asking for volunteers to make the many arrangements, or ask your auxiliary to participate.

> If you use community leaders, include school authorities, PTA's, National Foundation Chapter and other voluntary health agencies, women's clubs, business, labor and civic organizations, press, TV and radio.

3. Make plan known through coverage of community leaders' meeting by press, TV and radio, so that the plan will begin to be talked about.

4. Work out a time schedule for giving the shots in specified areas and solicit the services of physicians for specific days and hours. Keep an accurate record of services available from doctors and nurses as they volunteer; this may take full time of one person. Stress the hours for house calls, mobile unit or clinic attendance, remembering that *5:00 to 9:00 p.m. are the best hours for reaching fathers.*

5. Set up work programs for lay volunteers—making arrangements for clinic sites, answering telephone calls at headquarters, keeping records and being on hand for vaccinations, too. It is advisable to have extra hands at clinics for record-keeping, keeping order and answering questions.

6. Announce the sites for vaccinations well in advance. Prepare simple posters and flyers listing these. Clinic sites may include:

High school gyms
Armories
Fire stations
Church basements
Neighborhood or settlement houses
Lobbies of housing developments
Local department stores
American Legion posts
Union halls
Shopping centers
Grange halls (in rural areas)

Mobile units should be parked at busy intersections, opposite movie theaters, bowling alleys and bars, near subway and bus stations, shopping centers.

Visiting teams of doctors and nurses should have schedules for their calls in certain neighborhoods.

7. Arrange early with your local health officer for sufficient vaccine. Don't start until enough is on hand to do the job. Delays in shipments can wreck the plan. Line up syringes, etc., by borrowing from hospitals and doctors' offices to augment health department supplies, if needed.

8. Aim at starting at once. Your goal is to see that everyone has at least three shots before the summer polio season. For some, this may mean giving the course of shots two weeks to a month apart instead of following the usual schedule.

Individual members and county medical societies are invited to contact the State Office for ideas and suggestions for promoting and sponsoring "Babies and Breadwinners" polio protection campaigns on the local level.

Minnesota Blue Shield

The Congressional battle over President Kennedy's proposal to provide medical care for the aged through Social Security poses an obvious and urgent challenge to the medical profession. There is good reason to fear that such legislation will mark the initial breakthrough leading to government control of medicine for all age groups.

American medicine has faced similar challenges in the past.

The original formation and subsequent expansions of the Blue Shield program have been of critical importance in countering these threats.

It is natural, therefore, for the profession to once again look to Blue Shield during these crucial days.

The politicians and social planners often seek to create the impression that the medical profession has up to now callously ignored the economic needs of the public. They would have the public believe that physicians have stood idly by, and that now sudden and drastic changes must be made to remedy the plight of their distressed patients.

They seem to forget that for years the medical profession has quietly and conscientiously responded to the economic needs of their patients through the Blue Shield plan.

However, the record of the past does not meet the needs of the present. The public attitude toward paying health care bills has undergone profound changes in recent years. There is clear evidence that people generally are more and more reluctant to pay medical and hospital bills out of current earnings or savings. There is insistent pressure for plans which pay a larger and larger share of these expenses.

Indeed, labor, and in many cases management, favor some method of total coverage. In a number of areas this has led to the establishment of closed panel plans where the physician becomes a salaried employee, subservient to the labor or management group which pays his wages.

The politicians and the social planners envision a utopian system where the government would provide total coverage.

All of these systems, of course, would deprive the patient of free choice of physician.

The question before the medical profession is how to respond to the demand for fuller coverage and still preserve the voluntary system.

It is natural that the profession should look to Blue Shield for the answer. While Blue Shield was originally founded to provide protection for lower income families, it has steadily expanded its program to include nearly all income groups. Once again, Minnesota Blue Shield is acting to meet the needs of the profession, this time by seeking to expand its benefits to cover a greater portion of the subscribers' medical care expense.

Changes are being instituted which will increase the ceilings on service benefits, that is, the income level under which physicians accept the Blue Shield allowance as payment in full. Under the plan A family contract the annual income limit would be increased from $3,600 to $4,200; under Plan B, from $5,000 to $6,000, with similar adjustments in single contracts.

In addition, a new Blue Shield plan, tentatively called Plan C, would be introduced setting the family limit at $7,500 per year, and including a higher range of benefits than Plan A or B.

The contemplated changes also include increases in Plan A and B allowances for medical services, including a raise in the maximum payment for surgery from $200 to $250 under Plan A and from $400 to $500 under Plan B.

All of this would mean that "paid-in-full" Blue Shield benefits would be available to 75 per cent of Minnesota's population.

These progressive steps will once more demonstrate that the medical profession is actively seeking a voluntary solution to medical-economic problems.

It will also make it plain that Blue Shield provides an already functioning system through which a larger and larger share of the health care bill can be covered without forfeiting the patient's right to free choice of physician.

The politicians and the social planners seem to reckon without this system. Here is the opportunity to remind them these problems can be solved within the framework of a free and voluntary program, sponsored by the medical profession itself.

Medical Examiners

ST. PAUL WOMAN TO SERVE SIX MONTHS FOR ABORTION

Re: State of Minnesota —vs— Joan Townley Cullen

On March 15th, 1961 Joan Townley Cullen, 30, 425 Dayton Avenue, St. Paul, was sentenced by the Hon. John W. Graff, Judge of the District Court of Ramsey County, to serve a term of six months in the workhouse for the crime of abortion. On February 14, 1961 Mrs. Cullen withdrew her prior plea of not guilty and entered a plea of guilty before Judge Graff to an information charging her with committing that offense on August 20th, 1960. The Court had then referred the matter to the Ramsey County Probation Office for a pre-sentence investigation and continued the case to March 15, 1961.

Just prior to being sentenced the defendant admitted to the Court that she had received the sum of $50.00 for performing the abortion on a 26-year-old St. Paul divorcee. Judge Graff, after pointing out to Mrs. Cullen that she could be sentenced to a maximum term of four years, refused to place her on probation. However, the Court permitted the time that the defendant had already been incarcerated to be credited against the six-month term.

The investigation by the authorities which was conducted prior to the defendant's arrest disclosed that after a St. Paul woman learned that she was pregnant, the man who was responsible for her pregnancy contacted the defendant through mutual friends. After the defendant was apprehended she admitted in a signed statement that she had attempted on six different occasions to perform the abortion by means of inserting a catheter. The abortion victim subsequently became ill whereupon she was hospitalized at Ancker Hospital in St. Paul.

The defendant also admitted in her statement that she had received no medical training whatsoever in regard to performing this type of procedure. Mrs. Cullen, who stated that she was born on July 8th, 1930 holds no license to practice any form of healing in the State of Minnesota.

Minnesota State Board of Medical Examiners
J. P. Medelman, M. D.,
Secretary

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Blue Shield's medical care coverage has continually been expanded to keep pace with the advances of medical science. Recently, Minnesota Blue Shield has . . .

. . . added benefits for x-ray and laboratory services necessary to the diagnosis or treatment of an illness or injury, whether performed in the doctor's office, the patient's home, or the out-patient department of a hospital . . .

. . . included allowances for such advanced techniques as electro-shock treatments, open-heart surgical procedures, and cobalt and isotope therapy.

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Meetings and Announcements

JUNE

American College of Chest Physicians, Hotel Commodore, New York City, June 22-26. Mr. Murray Kornfeld, 112 E. Chestnut St., Chicago, Executive Director.

American Medical Association, Annual Meeting, New York City, June 25-30. Dr. F. J. L. Blasingame, 535 N. Dearborn, Chicago 10, Executive Vice-President.

Society for Vascular Surgery, Biltmore Hotel, New York City, June 25. Dr. George H. Yeager, 314 Medical Arts Building, Baltimore 1, Secretary.

The Trudeau School of Tuberculosis and Other Pulmonary Diseases, Forty-Sixth Session, Saranac Lake, New York, June 5-23. Write Secretary, Trudeau School of Tuberculosis and Other Pulmonary Diseases, Box 670, Saranac Lake, New York.

SEPTEMBER

American Association of Medical Clinics, Barbizon Plaza Hotel, New York, September 27-29. Dr. Joseph B. Davis, Davis Clinic, 131 N. Washington St., Marion, Ind., Secretary-Treasurer.

American Society of Clinical Pathologists, Olympic Hotel, Seattle, September 30-October 8. Miss Eleanor F. Larson, 445 N. Lake Shore Drive, Chicago, Manager.

Michigan State Medical Society, Grand Rapids, Pantlind Hotel, Grand Rapids, September 24-29. Dr. D. Bruce Wiley, 606 Townsend St., Lansing 15, Mich., Secretary.

The Minnesota Academy of General Practice announces its Eleventh Annual Fall Refresher to be held at Hotel Radisson, Minneapolis, September 27-28.

OCTOBER

American Academy of Pediatrics, Palmer House, Chicago, October 2-5. Dr. E. H. Christopherson, 1801 Hinman Ave., Evanston, Ill., Executive Director.

NOVEMBER

American Medical Association Clinical Meeting, Denver, November 27-30. Dr. F J. L. Blasingame, 535 N. Dearborn, Chicago 10, Executive Vice-President.

* * *

University of Colorado Medical Center: Physical Medicine and Rehabilitation for the Clinician; May 31-June 3; Obstetrics and Gynecology, June 19-21; Ophthalmology, July 10-13; Dermatology for the General Practitioner, July 27-29; Hepatic Pathology (Limited to 24) August 7-12; Pediatrics—Clinical and Research Advances in Pediatrics and Child Guidance, August 21-25; Pulmonary Disease Seminar, September 25-29. Write Office of Postgraduate Medical Education, University of Colorado Medical Center, 4200 East Ninth Avenue, Denver 20, Colorado.

* * *

Medical Continuation Courses, University of Minnesota Center for Continuation Study: May 15-19, Proctology for General Practitioners. June 1-3, Office Psychotherapy for General Physicians: All year, Cancer Detection for General Physicians. Write—Director, Department of Continuation Medical Education, 1342 Mayo Memorial, University of Minnesota, Minneapolis 14, Minnesota.

* * *

Camp for Juvenile Diabetics: Camp Needlepoint is a camp for diabetic children from 7 to 16 years of age. The camp is sponsored by the Twin Cities Diabetes Association and will utilize the facilities of Camp Wells, Big Lake, Minnesota from August 13-20. A physician and registered nurses will be in attendance. An active camping program will be carried out as well as informal instruction in the care of diabetes. Further information and applications may be obtained from the Secretary of the Twin Cities Diabetes Association, 5225 Minnetonka Boulevard, Minneapolis, Minnesota.

* * *

The section of Ophthalmology and Otolaryngology of the Southern Medical Association announces that they are now accepting papers by physicians of either specialty living in the area of the Southern Medical Association for consideration for presentation at the next annual meeting to be held in Dallas, Texas from November 6-9.

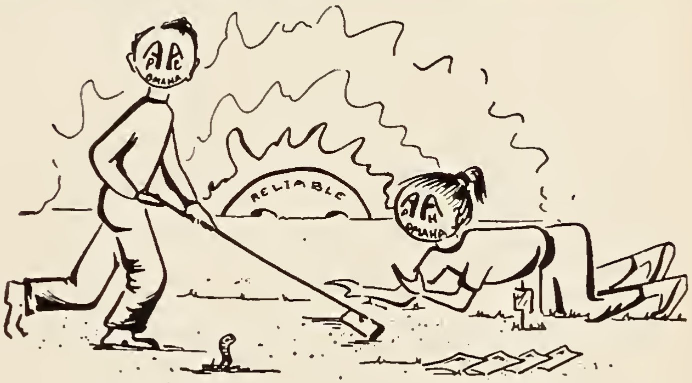
The paper or an abstract of the paper may be sent directly to the Secretary, Dr. Albert C. Esposito, Suite 1212, First Huntington National Bank Building, Huntington, West Virginia, as soon as possible.

* * *

Heart Grants Now Being Accepted: Minnesota Heart Association's Research Allocations Committee, has announced that applications for grants and fellowships for the fiscal year starting September 1, are currently being invited. Requests to investigate any area of cardiovascular disease will receive the committee's attention.

Requests for grants and fellowships should be submitted to the Minnesota Heart Association, 1821 University Avenue, St. Paul 4, Minnesota. Application forms may be obtained from the association.

Funds supporting the research programs of the Minnesota Heart Association come from public contributions to the annual independent February Heart Fund drive. In addition, memorial gifts received throughout the year are used exclusively for this purpose. Such gifts serve not only as a thoughtful tribute, but help assure longer and happier lives for everyone.



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Woman's Auxiliary

FINAL PLANS MADE FOR 39th ANNUAL MEETING

Under the supervision of Mrs. C. R. Tifft, general chairman of the 1961 annual meeting, the Ramsey County Auxiliary has made careful arrangements, and checked and re-checked all of the many details necessary to assure the success of the 39th annual meeting of the Woman's Auxiliary to the Minnesota State Medical Association.

Once again, the hostess Ramsey County Auxiliary extends an invitation to all Minnesota physicians' wives, whether they are members of the Auxiliary or not, to attend this outstanding meeting.

Social auxiliary activities will begin on Sunday, May 21, when auxiliary members whose husbands are participating in the Physicians' Golf Tournament and the Skeet and Trap Shoot, enjoy a bridge party and dinner at the beautiful White Bear Yacht Club.

On Monday, May 22, after the Executive Board luncheon at the Woman's City Club, the Auxiliary's annual tea will be held at the International Institute. Members of the Institute will be dressed in costumes representing their native lands, and will serve samples of their native dishes. Monday evening, Auxiliary members and their husbands will meet old and new friends at an open house in the Centennial Room of the St. Paul Hotel.

Following the annual meeting on Tuesday, May 23, the Auxiliary's annual luncheon will be held in the Ball Room of the Hotel Lowry, featuring an exclusive style show by Dayton's. Auxiliary members and their husbands will end the day by attending the annual banquet.

Last Auxiliary event will be a coffee party in the Ramsey Room of the Hotel Lowry on Wednesday morning, May 24. Mrs. S. M. Loken, St. Paul, will be hostess and invites all Auxiliary members and their guests to attend this last get-together of the 1961 Meeting.

HIGHLIGHTS

In March, members of the *Range Medical Auxiliary* enjoyed a joint meeting with the Range Medical Society. Dinner was held in the Mesabi Room of the Androy Hotel, Hibbing, followed by a business meeting in the doctors lounge of Hibbing General Hospital.

An interior decorator from Hibbing spoke to the group on techniques and trends in interior decorating, illustrating the talk with samples of new types of floor coverings and drapery fabrics.

* * *

In April, the *Hennepin County Medical Auxiliary* extended an invitation to Hennepin area residents to attend a program entitled "Your Health and You" which was held at the Minneapolis YMCA.

The program was an all-day event, complete with speakers who presented up-to-date information on various health topics. As an added attraction, a cancer film entitled "A Time and Two Women," was shown.

An X-ray mobile unit was also made available for free chest X-rays.

* * *

A Crookston clinic for children suffering from heart, orthopedic and other physical disabilities was sponsored by the *Red River Valley Auxiliary* in April.

Forty-eight clinics, under the supervision of the Crippled Children Services of the Minnesota Department of Public Welfare, are conducted each spring and fall throughout the state. Last year, 1,729 children attended.

Mrs. Harold Thysell, Crookston, was chairman in charge of local arrangements for the clinic.

* * *

Members of the *Zumbro Valley Medical Auxiliary* heard Dr. E. M. Litin, Mayo Clinic psychiatrist, give an address on "Hypnosis" at their March meeting.

The Zumbro Valley group met for coffee at the Mayo Foundation House prior to the meeting.

* * *

The *Hennepin County Auxiliary's* annual carousel style show and brunch was held April 26 and 27 at Dayton's, Minneapolis.

Proceeds from the show went to the American Medical Education Foundation, the Loan and Nurses Aid and Health Career Fund, and United Fund.

Mrs. Richard C. Tucker and Mrs. J. Harold Schultz were co-chairmen of the event. Serving on the committee were Mmes. Rolf L. Andreassen, Robert M. Barnett, Elvin Englund, Myron E. Erickson, Harold Hanson, Erling T. Hauge, Richard S. Johnson, Warren L. Kump, D. Keith Millett, James G. Myhre, A. M. Soborov, J. L. Stennes and Gordon W. Strom.

* * *

The *Benton-Stearns Medical Auxiliary* was the sponsor of a para-medical tea last February.

The tea was held in the nurses' home of the St. Cloud Hospital, and all junior and senior high school students were invited. Purpose of the tea was to stimulate interest in the para-medical field which includes careers in anesthesia, medical technology, X-ray technology and nursing.

The program included a tour of the nurses' residence, a movie on "When You Choose Nursing," and a panel discussion.

Mrs. John Olinger, president of the Benton-Stearns Auxiliary, was among those pouring for the tea.

* * *

Mrs. Giles Koelsche, Rochester, a member of the *Zumbro Valley Medical Auxiliary,* has been appointed as a member of the Minnesota Women's Civil Defense Council. The announcement of Mrs. Koelsche's appointment was made by the Minnesota Department of Civil Defense.

The newly-organized Women's Civil Defense Council, developed under the Department of Civil Defense's new volunteer activities program, consists of community leaders and representatives of organizations concerned with increasing Civil Defense participation.

Mrs. Koelsche will attend semi-annual meetings with other women throughout the state.

NATIONAL AUXILIARY MEETING

Approximately 3,000 members of the Woman's Auxiliary will hold their 38th annual convention in New York City, simultaneous with the A.M.A. meeting, June 25-30.

Events will include a tea and tour in the United Nations Headquarters; business sessions devoted to reports and discussions on Auxiliary activities in legislation, civil defense, mental health, community service, health career recruitment, and public safety; and a luncheon honoring past presidents of the Auxiliary.

At the convention, the Auxiliary will present its annual contribution to the American Education Foundation. The Auxiliary hopes to exceed last year's contribution of $175,000.

Also, presidents of the constituent state auxiliaries will report on their scholarship and loan programs. Last year, $236,651 was raised to make scholarships and loans available to young people who wish to enter careers in medicine.

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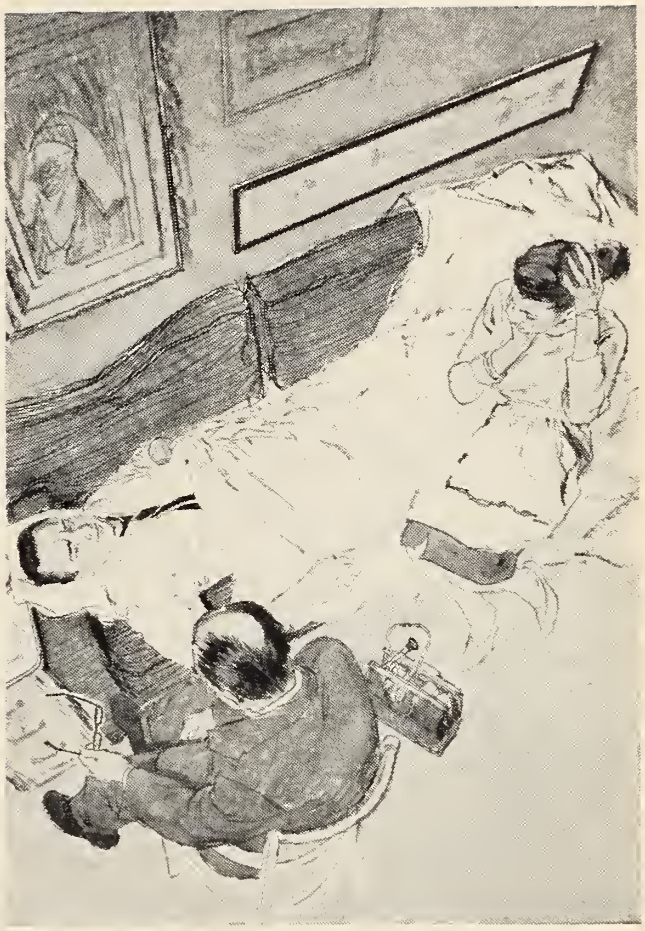

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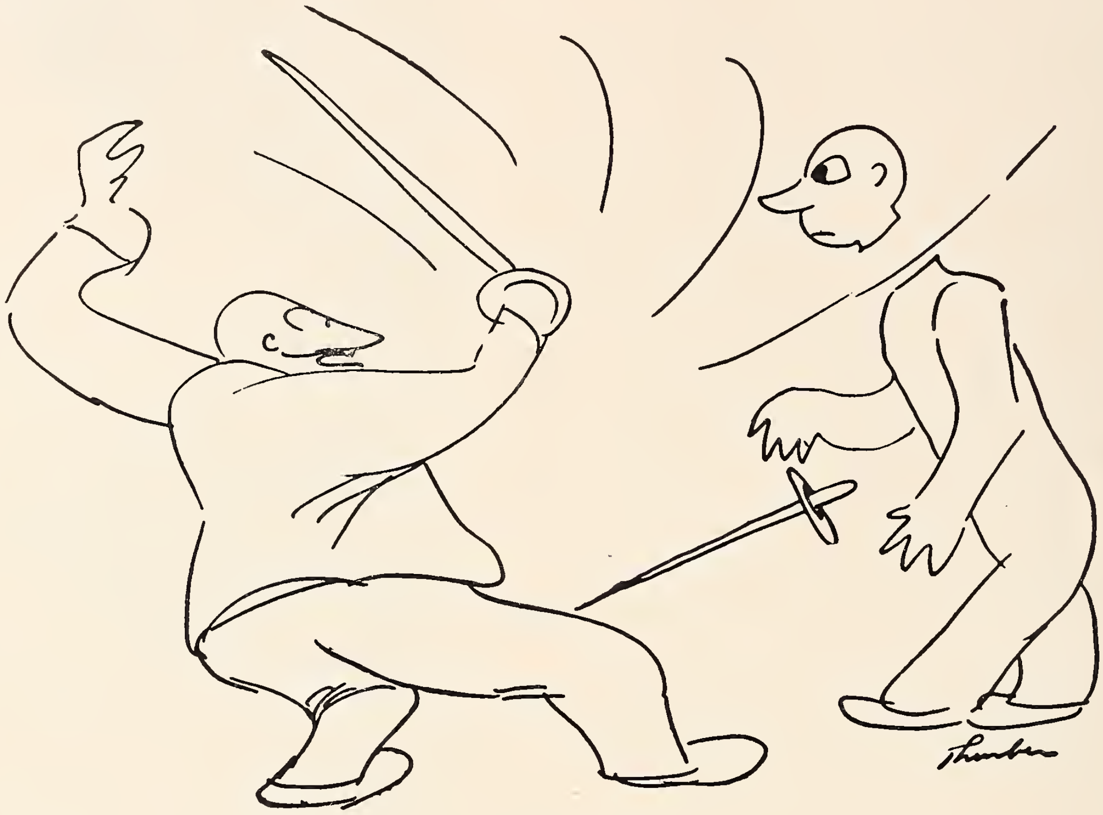

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In Memoriam

FRANCIS F. CALLAHAN

Dr. Francis F. Callahan, 70, head of the tuberculosis control section of the Minnesota state department of public welfare, died April 7 of a heart attack.

A graduate of the Universities of Maryland and Minnesota, Dr. Callahan interned at Baltimore City Hospital before beginning his practice in 1923 at Pokegama, Minnesota. Until 1942 he served as medical director of the Pokegama sanatorium when he became superintendent of the state sanatorium at Walker.

In 1947 he was appointed chief of the medical service unit of the state division of social welfare.

He was a member of the East Central Medical Society, Minnesota State Medical Association, American Medical Association, Minnesota Trudeau Society, National Tuberculosis Association, American Sanatorium Association and Minnesota Academy of Medicine.

He is survived by his wife and three daughters.

HENRY E. BINGER

Dr. Henry E. Binger, 75, died March 13 at Phoenix, Arizona. The former St. Paul physician had retired in 1948.

An eye, ear, nose and throat specialist, Dr. Binger was a graduate of the University of Minnesota and interned at St. Luke's Hospital, St. Paul. He began his practice in 1915.

A member of the Ramsey County Medical Society and American Medical Association, Dr. Binger was an associate member of the Minnesota State Medical Association. He was a life member of the American Academy of Otolaryngology and Ophthalmology, a fellow of the American College of Surgeons and had served on the staffs of all St. Paul hospitals.

He is survived by his wife, three sons, two daughters, a sister and a brother.

HENRY G. COLLIE

Dr. Henry G. Collie, 85, died January 6 in St. Petersburg, Florida.

Retired since 1941, Dr. Collie had served the Northern Pacific Beneficial Association in Brainerd and St. Paul from 1918 until his retirement. A graduate of Northwestern Medical school, he began his practice in January, 1904 at Sioux Falls, South Dakota.

A member of the Ramsey County Medical Society and American Medical Association, he was honored by the Minnesota State Medical Association as a member of the Fifty club.

His specialty was obstetrics.

F. D. GRAY

Dr. F. D. Gray, 90, pioneer Marshall physician died March 19, just a year after his complete retirement.

After graduating from Northwestern Medical school and interning at St. John's Hospital, St. Paul, Dr. Gray opened his practice in Vesta in 1900. In 1911 he moved to Marshall where he practiced until January, 1960, the last five years in semi-retirement.

Active in many non-medical community affairs, he served at one time as president of the Marshall School board, was a member of the Masons for over fifty years and was active in the area's Presbyterian churches. He was the founder of the community's first hospital.

During his long medical career he was a member of the Lyon-Lincoln County Medical Society, American Medical Association, a life member of the Minnesota State Medical Association and an officer in the Southern Minnesota Medical Society.

He is survived by his wife, two sons, Dr. Robert F. Gray and Dr. Frank Gray, Jr., a daughter, two grandsons and one great-grand-daughter.

NEIL T. NORRIS

Dr. Neil T. Norris, 51, died March 3 at Caledonia after a heart attack.

Dr. Norris, who was a graduate of the University of Minnesota Medical school, had begun his practice in 1937 after interning at St. Mary's Hospital, Minneapolis.

He had served for two terms as coroner of Houston county for two terms and was a member of the board of health in Caledonia for many years. Active in the Zumbro Valley Medical Society, Dr. Norris was also a member of the Minnesota State Medical Association, American Medical Association, and Minnesota Medical Alumni Association.

He is survived by his wife, Dr. Hildegard Virnig, a daughter and a son, Thomas, who is a pre-medical student at Hamline University.

OLIVER H. PETERSON

Dr. Oliver H. Peterson, 76, died April 3. The Minneapolis physician, who had retired in 1959, was a former chief of staff at Swedish Hospital. During his career he served as medical director for the association of insurance companies and was a director of North American Life and Casualty Company.

A graduate of the University of Minnesota, he was a member of Phi Beta Pi medical fraternity, Hennepin County Medical Society, a life member of the Minnesota State Medical Association and American Medical Association. He began practice in 1916.

He is survived by his wife, two sons, a daughter, two brothers and three sisters.

GERALD M. KOEPCKE

Dr. Gerald M. Koepcke, 59, Minneapolis eye, ear, nose and throat specialist died March 30.

Dr. Koepcke was a graduate of the University of Minnesota Medical School and interned at Minneapolis General Hospital. He began his practice in 1926. He had also attended the University of Wisconsin.

A member of the Hennepin County Medical Society, Minnesota State Medical Association, and American Medical Association. He was also a fellow of the American College of Surgeons and International College of Surgeons. During World War II, he served as a commander in the Navy.

He is survived by his wife, two sons, two daughters, his mother and two brothers.

JOSEPH S. COLLINS

Dr. Joseph S. Collins, 78, former secretary of the Wabasha County Medical Society, died March 20.

Dr. Collins was a graduate from the Collegiate Institute, Geneseo, and the College of Medicine at the University of Iowa in 1905. After opening his practice in Illinois, he moved to Caledonia in 1914 and to Wabasha in 1920, where he practiced until his retirement in 1954.

He was a life member of the Minnesota State Medical Association, and American Medical Association, as well as the Wabasha County Medical Society. During his career at Wabasha, he served on that community's water board.

He is survived by 19 nieces and nephews.

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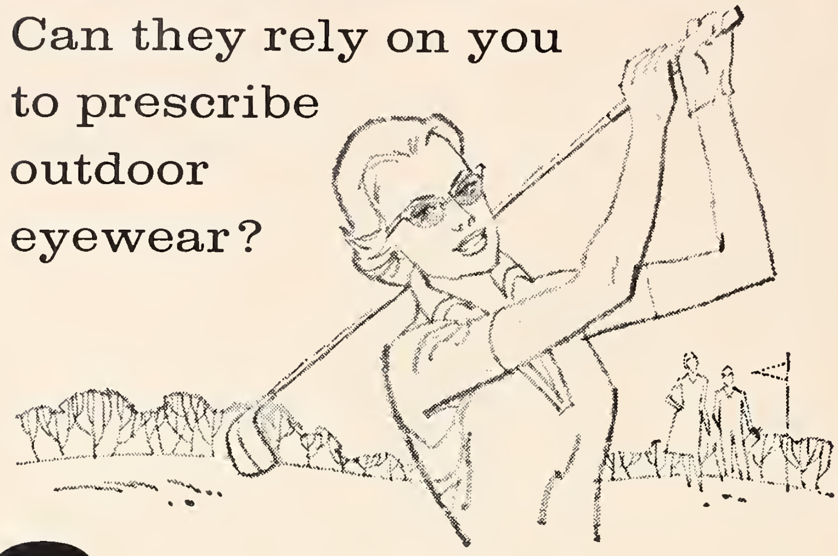

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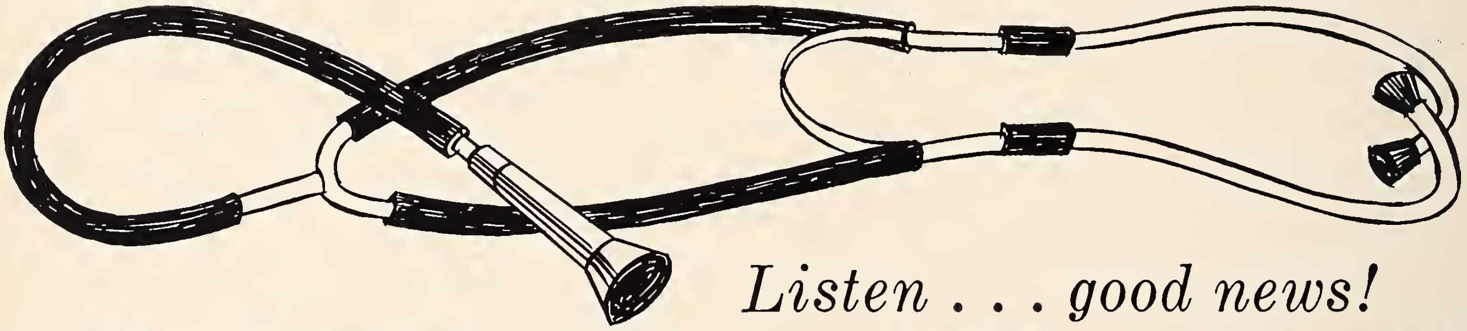

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Physician's Diary

Doctor Fred Lyon, head resident of obstetrics and gynecology, University of Minnesota hospitals, spoke at the senior capping service of University nurses. The ceremony was held in the main ballroom of Coffman Memorial Union.

* * *

Doctor Edward W. Ciriacy was elected president of the Ely-Bloomenson Community Hospital at the regular March meeting of the medical staff. **Doctor J. P. Grahek** was elected vice-president and **Doctor Jan Sekanins** secretary. The remaining members of the medical staff are, **Dr. M. D. Doebler** and **Dr. Gordon Stewart.**

* * *

President of the Zumbro Valley Medical Association. **Doctor Ernest A. Olson**, presented the Association's check for $500 to Donald H. Brown, chairman of the area Senior Citizens Services finance committee. SCS, formed to provide activity for senior citizens of the area, is raising money to acquire a building for establishment of an all-Rochester Day Center. All civic clubs and groups interested in aiding financially or by working on the project, may contact **Dr. W. E. Wellman**, chairman of the group.

* * *

Doctor H. H. Russ of Le Center has been appointed Le Sueur county health officer for 1961. The appointment was made at a special meeting of the Le Sueur county board of commissioners.

* * *

Two Rochester doctors had a chance to renew acquaintances on the campus of St. Olaf College in Northfield, Minnesota recently. **Doctor Donald Balfour**, emeritus director of the Mayo Foundation and **Doctor H. J. Svien** made a visit to their alma mater and also had the opportunity to play the new organ which was dedicated last fall. Dr. Balfour received an honorary doctor of laws degree in 1943, and Dr. Svien is a 1931 graduate of the college.

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The American Medical Association's 110th annual meeting, the "World's Fair of Medicine" will bring an estimated 25,000 physicians into New York City, June 25-30. **Doctor Herman Moersch**, emeritus member of the Mayo Clinic staff and director of medical education and research of the American College of Chest Physicians, is in charge of a one-day scientific meeting sponsored jointly by the A.M.A. and the College. The five-day convention, biggest of its kind in the world, will not only bring to New York doctors, but residents, interns, exhibitors and persons connected with all allied fields of medicine. The theme of this event will be "Teamwork in Medicine."

* * *

Newly elected chairman of the board of directors of the American College of Allergists is **Doctor Giles A. Koelsche**, of Mayo Clinic, Rochester, Minnesota. His election was announced at the organization's national headquarters in Minneapolis.

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Doctor M. Donald Olmanson of St. Peter is leaving his practice to work with **Doctor Gordon** Seagrave in the Namkham hospital in Burma. **Doctor Olmanson**, now in practice at the St. Peter Clinic will leave the first of July this year to serve for two years as a medical practitioner, accepting the offer of the American Medical Center for Burma (AMCB). Doctor Olmanson has stated that he is primarily interested in the experience to be gained by living and working with the people of Burma. A son-in-law of Doctor Albert Fritsche, he will be the only American doctor in Burma in addition to Doctor Seagrave. The hospital is supported entirely by contributions of patients and interested Burmese and by Americans through the AMCB. The choice of Doctor Olmanson was made in January after four months of correspondence. Both the doctor and his wife feel it will be a valuable experience for the entire family.

* * *

Doctor Margaret Ross, a fellow in psychiatry at the Mayo Clinic, has moved her office from the clinic to the Rochester State Hospital.

* * *

Doctor Manuel O. Jaffe, a former fellow in dermatology in the Mayo Clinic has opened practice in Minneapolis.

* * *

New officers of the Minnesota Academy of Ophthalmology and Oto-Laryngology for the years 1961-62 are as follows: President, **Doctor Jerome Hilger**, St. Paul; First Vice President, **Doctor Harold Ulvestad**, Minneapolis; Second Vice President, **Doctor Robert Hugh Monahan**, St. Paul; and Secretary-Treasurer, **Doctor Richard O. Leavenworth, Jr.**, St. Louis Park. Council members are: **Doctor Thomas Kirby, Jr.**, Chairman, Rochester; **Doctor Robert R. Cooper**, Minneapolis; **Doctor Neill F. Goltz**, Fargo, North Dakota.

* * *

Doctor Roger L. J. Kennedy, a member of the Mayo Clinic since 1926 has recently retired from active practice. He was a member of the council of the Minnesota State Medical Association from 1947 to 1951 and in 1951 was elected president of the Association taking office in 1952. He was a member of the House of Delegates of the American Medical Association from January, 1959 to January, 1961.

* * *

Dr. Philip W. Brown, a member of the staff on the Mayo Clinic for 38 years, retired from active practice in that institution on April 1, 1961. Doctor Brown was awarded the silver medal of the American Medical Association at the annual meeting in 1937.

* * *

Doctor Donald Hastings, Minneapolis, was guest speaker at a meeting of the Service League of Minneapolis General Hospital recently. He spoke of General Hospital aids for the mentally ill.

* * *

Doctor Herman Miller, Austin physician, was hospitalized recently with an apparent heart attack.

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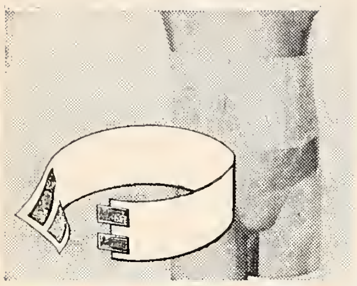

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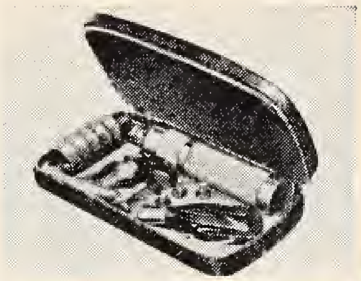

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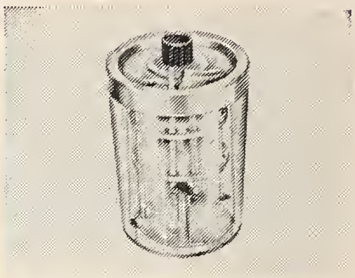

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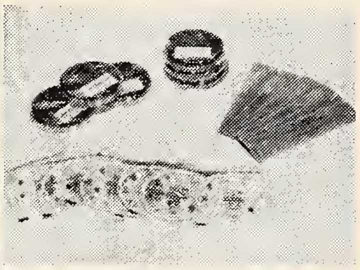

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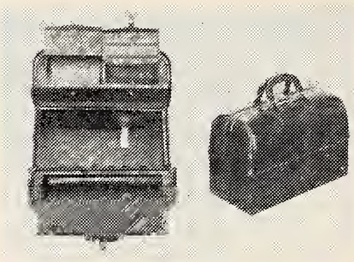

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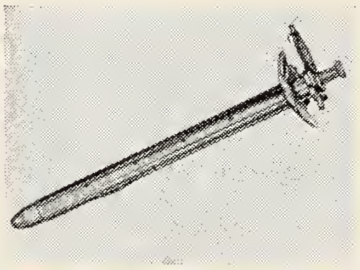

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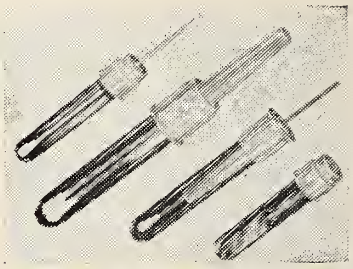

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Doctor Gordon Franklin recently was cited by the state director of the Minnesota Selective system for his ten years of Draft Board service. A letter of appreciation was sent from Lt. Col. Murley A. Reep, state director, to Dr. Franklin on January 25. Enclosed with the letter was a certificate of appreciation for his record of service and loyalty over the past ten years. In part the letter stated, "It is difficult, perhaps, for the people of your community to realize the many man-hours you have given without remuneration in the faithful performance of your patriotic service, because your interviews and consultations with the registrants were somewhat behind the scene and in the background preceding the climax of induction."

* * *

Recently a Wayzata high school graduate, **Doctor Charles Zinn,** became associated with **Drs. W. W. Rieke** and **D. W. Feigal** at 201 East Lake Street, Wayzata, Minnesota. Dr. Zinn who is a graduate of the University of Minnesota medical school, has been at the Elk River clinic since 1956 following internship at Ancker Hospital of St. Paul. The son of Charles F. Zinn of Crystal Bay, Dr. Zinn is married and has two children. They will reside at Oakwood, Plymouth.

* * *

Doctor Maxwell N. Barr was the guest speaker at a recent meeting sponsored by the American Cancer Society held at Methodist Hospital. The program included films on breast and uterine cancer and a question and answer session.

* * *

Doctor H. M. Skaug, Chatfield, reports he attended the Medical Clinic of Minnesota which is conducted annually under the auspices of the University of Minnesota Medical School. The Medical Clinic is sponsored by the American Academy of General Practitioners. Doctors from many areas of the United States attend these refresher courses.

* * *

Psi chapter, Alpha Kappa Kappa medical fraternity held its 63rd annual dinner meeting at the St. Paul Town and Country Club. Some 120 Minnesota physicians attended this meeting. Officers of the group are: **Doctor T. J. Bloedel**, Osseo, president; **Doctor B. J. McGroarty**, St. Paul, vice president, and **Doctor K. O. Nimlos**, St. Paul, secretary-treasurer.

* * *

Doctor Frank Boyle, Springfield physician, a Rotarian, discussed progress in medicine during the last 25 years at a recent meeting of the Springfield Rotary Club. The meeting was held in the Springfield Gun Club.

* * *

A health day for senior citizens sponsored by the Woman's Auxiliary to Hennepin County Medical Society was held at the YMCA in Minneapolis. **Doctor James A. Blake**, president of Hennepin County Medical Society presided at the morning session. **Doctor James Garvey** discussed "Good Mental and Physical Health." **Doctor Arthur Kerkhof** lectured on "Heart and Hardening of the Arteries." **Doctor Arthur B. Quiggle** discussed "Keeping Fit" . . . Luncheon was held at noon. Two films on cancer were presented. **Doctor Russell Frys** commented on "Time and Two Women" and "The Warning Shadow." **Doctor James Rogers Fox** presided at the afternoon session. **Doctor Wesley H. Burnham** discussed arthritis and fractures, and Doctor Fox led a general discussion of medical problems. "The Medicine Man," a film on nutrition was also shown. A mobile X-ray unit was available for free chest X-rays.

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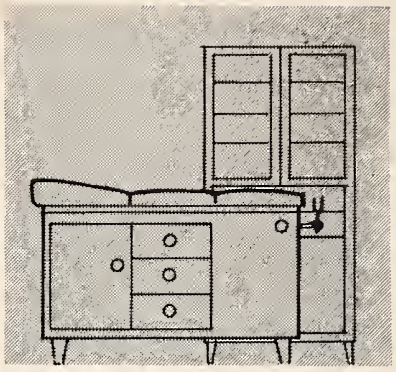

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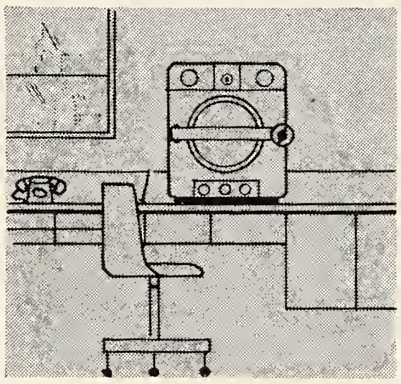

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Two Mayo Clinic physicians appeared on the program of the four-day sectional meeting of the American College of Surgeons in Philadelphia to discuss progress in surgery. They were **Doctor F. Henry Ellis, Jr.**, who spoke on "The Surgical Treatment of Extracranial Occlusive Cerebrovascular Disease"; and **Doctor O. H. Beahrs**, who was a member of a panel discussing "Cancer of Lip, Tongue, and Mouth."

* * *

Doctor Frank Morrell, former University of Minnesota associate professor of neurology, has joined the Stanford University school of medicine faculty as professor of medicine.

* * *

Doctor Jesse E. Edwards, Chief Pathologist, Charles T. Miller Hospital, St. Paul and Professor of Pathology, Graduate School, University of Minnesota, recently completed a speaking tour. In San Francisco, he was the guest speaker before the California Academy of Medicine where his address was entitled "The Changing Picture in Bacterial Endocarditis." In San Francisco, he also addressed the Women's Physicians Club of San Francisco and also spoke before the staffs of The Children's Hospital and the Presbyterian Hospital, respectively. At the University of Michigan, Doctor Edwards participated in a Postgraduate Course on Rheumatic and Congenital Heart Disease and also addressed the student body and faculty of the Medical School. In the Postgraduate Course, Doctor Edwards delivered two lectures and was the moderator of four panels dealing with various aspects of congenital heart disease.

More than 250 doctors, dentists and nurses participated recently in the fourth session of the medical education seminars at St. Cloud College. **Doctor Arnold J. Kremen**, clinical professor at the University Hospital presented a lecture on "Advances in Cancer Treatment by Use of Drugs." **Doctor Frederick M. Owens, Jr.**, another clinical professor, spoke on "Medical Management of the Terminal Cancer Patient."

* * *

The Southern Minnesota Academy of General Practice recently held a dinner and business meeting at Turner Hall in New Ulm. **Doctor Cliford Gastineau** of the Mayo Clinic, discussed "Diagnosis and Medical Management of Thyroid Disorders." **Doctor Erick Hakanson**, Ancker Hospital, St. Paul spoke on "Obstetrical Emergencies." During the evening session, two St. Paul doctors spoke, **Doctor Richard Johnson** on "Management of Common Foot Disorders in Children," and **Doctor Edward Strem** discussed "The Asthmatic Child."

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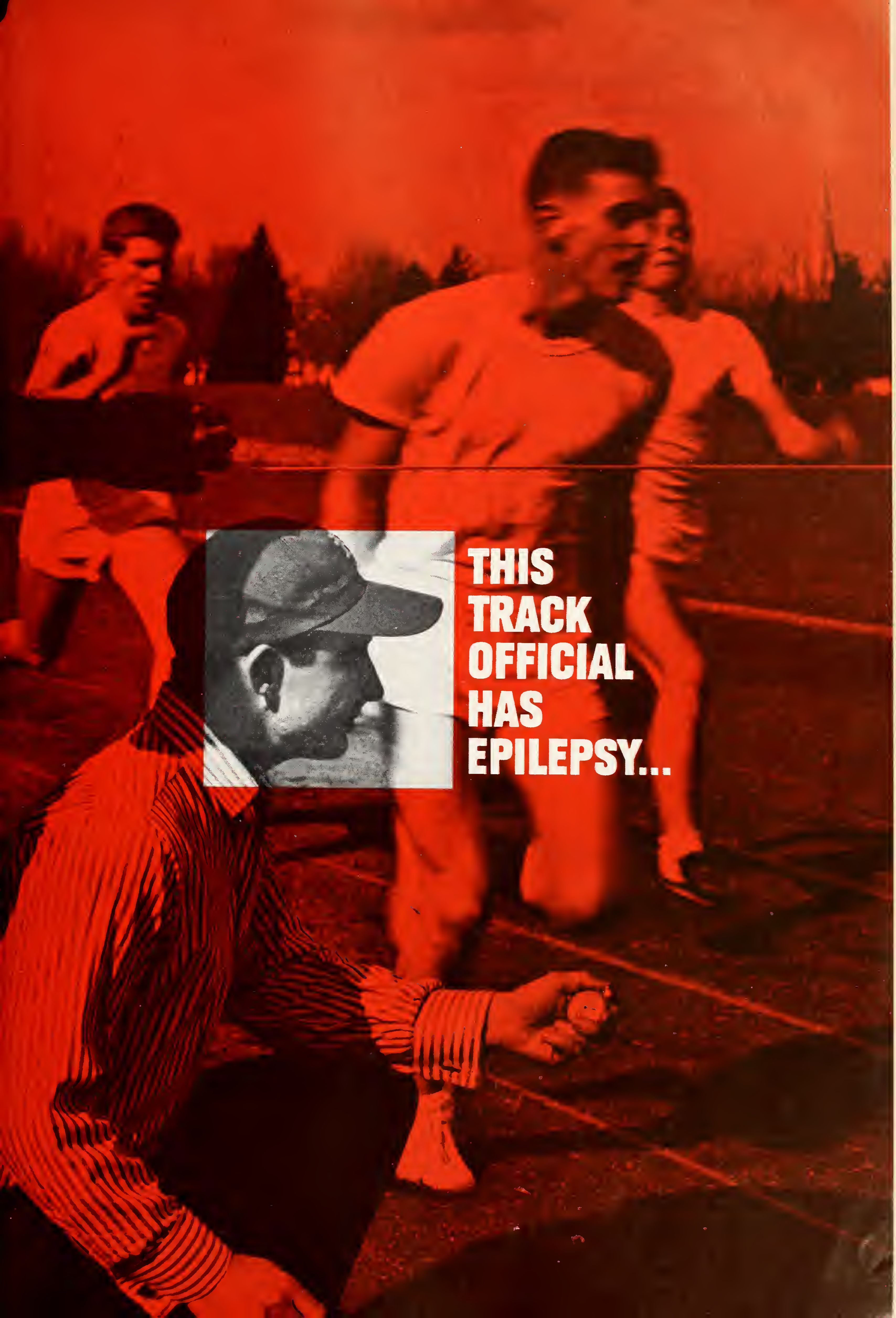

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Contents

SCIENTIFIC ARTICLES

ORIGINAL CONTRIBUTIONS

Differential Diagnosis of Knee Injuries

Evan S. Ellison, M. D., Minneapolis, Minnesota 221

Incompetent Cervical Os as a Factr in Habitual Abortion—The Value of Shirodkar Operation

William P. Sadler, M. D., Minneapolis, Minnesota 224

Topical Antibiotic Therapy

Isadore Fisher, M. D., Minneapolis, Minnesota 227

Total Avulsion of Scalp—Report of Case

John B. Erich, M. D., Rochester, Minnesota 233

History of Medicine in Sherburne County Prior to 1901

Josie W. Pfeiffer, Elk River, *Robert Rosenthal, M. D.,*
St. Paul, Minnesota 238

ABSTRACTS AND BRIEFS 246

Minnesota
Medicine
Represents

Duluth Surgical Society
Minneapolis Academy of Medicine
Minneapolis Obstet. and Gynecol. Soc.
Minneapolis Surgical Society
Minnesota Academy of Medicine

Minn. Acad. of Occup. Med. and Surg.
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Minnesota Academy of Ophthalmology and Oto-Laryngology
Minn. Society of Clinical Pathology

Medicine

Volume 44
Number 6

ne, 1961

MISCELLANEOUS ARTICLES

PRESIDENT'S LETTER 247

EDITORIAL

Medico-Legal Interprofessional Relationship
Harold W. Brunn, Executive Secretary, Minnesota State Medical Association 250

LETTERS TO EDITOR 253

MEDICAL ECONOMICS 254

THE ART OF MEDICINE 257

MINNESOTA BLUE SHIELD A-27

MEETINGS AND ANNOUNCEMENTS A-29

WOMAN'S AUXILIARY A-33

IN MEMORIAM A-37

THE PHYSICIAN'S DIARY A-39

CLASSIFIED ADVERTISING A-42

INDEX TO ADVERTISERS A-43

Minn. Society of Internal Medicine
Minn. Society of Neurol. & Psych.
Minn. State Med. Association
Minnesota Surgical Society

Minnesota Trudeau Society
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Differential Diagnosis of Knee Injuries

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All clinicians can benefit from the author's analysis of the "Injured Knee." Many helpful hints are found in this concise article.

THIS ARTICLE is an effort to simplify the examination of the acutely injured knee. Often, the diagnosis of internal derangement of the knee is merely an excuse for not attempting to achieve a more specific evaluation. It is true however, that occasionally a more accurate initial diagnosis cannot be made, but in these instances, the diagnosis can be narrowed down to one or two possibilities. In cases where there is a question of a surgically repairable lesion that cannot be diagnosed by other measures, one is justified in giving the patient a general anesthesia in order to diagnose the injury accurately from the start and institute proper initial treatment.(8,9,10,12) It is the attempt to make the diagnosis initially or to narrow it down to one or two possibilities, that this discussion is concerned with. For treatment after the diagnosis is made, the reader is referred to the writings of Dr. O'Donoghue.

History

The history is of great value in determining the mechanics of the injury. A direct blow would suggest damage to the bone or cartilage of the patella, tibia, or femur. It is possible to fracture the articulating cartilage only and not the underlying bone. X-rays will not show cartilaginous damage but the history and physical findings will often identify and localize articular irregularities.

The position of the knee at the time of injury, in flexion or extension will mechanically determine the site of injury to the meniscus, cartilage, bone and ligaments. Because the tibia articulates with the femur more posteriorly when the knee is flexed and anteriorly when the knee is extended, flexion of the knee at the time of injury will cause the damage to occur more posterior in the joint and extension of the knee at the time of injury will cause it to be more anterior. The direction of the blow will determine which ligaments will be damaged. A blow on the outside of the leg will involve the medial collateral ligaments and a blow on the inside, the lateral collateral ligaments. An injury from the front or back, hyperextension, or medial or lateral angulation could tear the the cruciate ligaments.

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Extending the knee with severe muscular effort could tear the quadriceps or patellar tendon, while flexing the knee with severe muscular efforts could tear the hamstrings.

The fact that the patient could or could not bear weight on the knee after injury would help to determine the degree of initial injury. A prompt appearance of joint effusion would indicate more extensive damage than a delayed swelling.

A history of locking of the knee joint should be sought for and the type of locking defined. With a torn meniscus, pain usually occurs on the same side of the knee that the meniscus is involved. Locking in flexion would suggest a posterior tear, and locking in extension, an anterior tear of the meniscus. A history of anterior or posterior instability of the knee joint would indicate cruciate ligament damage. In a collateral ligament tear, the patient will pinpoint the pain over the course of the ligamentous fibers. Other soft tissue involvement, such as tendon or capsular tear will also be localized by the site of the pain.

Examination

Inspection:

The knee should be carefully examined visually before it is touched. It should be checked for swelling, bony deformity, asymmetry, alignment, color change, or skin damage. It should be compared with the uninjured knee at the time.

Changes such as atrophy of the vastus medalis, abnormal bulging, or asymmetry can readily be determined. The back of the knee should be examined carefully for aneurysm, Baker's cyst, hemorrhage, or other abnormality. The range of active and passive motion should be determined. Locking of the knee joint can be caused by a loose body, torn meniscus, dislocation of the patella, defect in the articulating joint surfaces of the femur or patella, or muscle spasm.

Palpation:

Fluid in the joint can be ballotted from side to side. Crepitus or grating in the patella or the joint surfaces on motion can be palpated as the joint is moved. The patella can be checked for instability by pushing it laterally with the knee extended if it is not already dislocated. Tender areas can be defined. The quadriceps, patella, and patellar tendon should be palpated for evidence of tear or fracture. The temperature of the joint should be noted. The quadriceps muscle tone should be determined by extension of the knee joint against resistance. If stress is applied to the knee joint so that there is compression of the condyles on one side and pain is produced, this indicates a meniscus tear, whereas if the stress is applied to the joint so that there is distraction of the condyles on one side and pain is produced, this indicates a collateral ligament tear. A torn collateral ligament will allow more than one centimeter play in springing of the knee with the joint extended. The cruciate ligaments can be checked by pushing and pulling on the tibia with the knee flexed 90 degrees. Anterior dislocation of the tibia on the femur indicates anterior cruciate ligament tear and posterior dislocation, a posterior cruciate ligament tear. The amount of rotation of the tibia on the femur should be examined. No rotation suggests locking. Too much rotation indicates ligament tear.

X-Ray Examination

X-rays should be examined for fracture of the tibial plateau or femoral condyle. The articular surfaces should be examined for localized defects. The tibial tubercle may be separated or the patella fractured. The patella may be pulled up proximally in avulsions of the patellar tendon or dislocated laterally. The tibial spine should be checked for avulsions. There may be slipping of the distal femoral epiphysis in children.

Narrowing of the joint space is usually not helpful in fresh injuries as it may occur in changes of position of the knee on the x-ray plate. On the other hand, widening of the joint space indicates collateral ligament tear. Loose bodies should be searched for.

Soft tissue swelling can be identified as well as fluid in the joint. Often, a Baker's cyst filled with fluid can be seen on x-ray.

The first knowledge of an osteochondroma or tumor in the region of the knee can occur from attention being called to it by a trauma.

The usual emergency views obtained are A-P, lateral, and tunnel view through the notch of the femoral condyles, but the superior-inferior view of the patella may be necessary in questionable vertical fractures of the patella.

Aspiration

Aspiration of the knee joint in a tense effusion will relieve pain and furnish additional diagnostic information. The knee should be wrapped firmly with an ace bandage from above the knee down to the toes, and cold packs applied for 24 hours to prevent recurrence of the effusion.

If the fluid obtained from the joint is bloody, this will confirm the diagnosis of trauma. Serosanguinous or clear joint fluid will indicate a sub-acute or chronic process. A cloudy yellow joint fluid will indicate infection.

The fluid should be cultured and a complete fluid analysis performed if there is any question about trauma being the only cause of the process.

Summary

An attempt has been made to describe the routine examination of the acutely injured knee. The history has been discussed emphasizing its importance and indicating certain questions that the examiner should ask in order to get a clearer picture of the type of injury before the physical examination is begun. In performing the examination of the knee, the signs to be looked for on inspection and palpation have been discussed. Adjunctive measures in the hospital, such as x-ray examination and aspiration of joint fluid have been described. This has been done so that an effort will be made to form a clinical diagnosis in every case rather than a "wait and see" attitude adopted. Early surgical reconstruction of many soft tissue injuries about the knee joint give such superior results, that this attitude is necessary in order to salvage repairable damage to the acutely injured knee.(9,10)

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ALICE IN WONDERLAND SYNDROME (Lilliputian Syndrome)

Lewis Carroll, the creator of Alice in Wonderland, suffered severely from migraine headaches. Alice in Wonderland dreamed that she assumed unusual sizes and shapes. She was often puzzled over her identity and a dual personality. She had illusions concerning the size and position of certain objects. These bizarre experiences were no doubt a mirror of those experiences suffered by Carroll as a sequel to his migraine. These psychic alterations occur in hypnagogic states in intoxication with fantastica drugs, in delirium of fevers and in schizophrenia. This is sometimes called the depersonalization syndrome.

Robert H. Durham

Incompetent Cervical Os

as a Factor

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IN RECENT YEARS emphasis has been placed on incompetence of the internal cervical os as an etiologic factor in late habitual abortion. Lash and Lash[8] in 1950 suggested that an anatomic defect or incompetency is a factor. They directed attention to surgical correction of the condition in the non-pregnant uterus. Anatomic incompetence as a result of trauma following old high cervical lacerations (unhealed or unrepaired), Duhrssen's incisions, previous hysterotomies, low cervical Cesarian sections, previous traumatic deliveries, repeated dilatation and curettages, and high amputations of the cervix, leave little room for debate about the significance of this relationship as an etiologic factor.

More recently, we believe there also is a defect in function of the cervix proper, or lower uterine segment. It is still controversial whether a physiological defect comes into play (hormonal or otherwise) when the painless and silent process of labor gets underway.[1, 3, 9] Borderline congenital anatomical defects rendering the os incompetent, likewise, are controversial. Picot et al[10] have reported a small series of cases and emphasize the lack of previous trauma in their cases. No patient had received curettage of a non-pregnant uterus. No cervix presented signs of amputation or extensive scarring. Three patients had each experienced one pregnancy, and the largest baby weighed 7 lbs., 15 oz. Thus, the main etiologic factor appears to be a basic weakness of the supportive tissue of the cervix which at best permits it to support only one term pregnancy. Uncomplicated labor itself may impose on the congenitally weak cervix a stress which renders it incompetent for subsequent pregnancies.

This paper was presented to the Minnesota State Obstetrics and Gynecology Meeting at Rochester, Minnesota on May 7, 1960

For patients who are plagued with late habitual abortion a new operation temporarily closing the cervical os appears to be corrective in some instances. The author presents a patient with an apparent congenital weakness, or defect, of the cervix which was recognized during the first pregnancy and which tends to support the theory of an inherent cervical os weakness.

The Value of Shirodkar Operation in Habitual Abortion

The patient's history is helpful in orienting the physician toward the correct diagnosis. The usual course of events is seen in patients with repeated pregnancies terminating in the late second trimester from 14 to 28 weeks gestation with rupture of membranes, and subsequent onset of labor following a painless silent effacement of the cervix with herniation of the membranes through a cervix dilated 2 to 3 cm. or more. No other symptoms may be present other than mild lower abdominal discomfort.[6, 7] The condition may be discovered accidentally when the patient is given a speculum examination for some type of vaginitis.

In the Minneapolis area, Stromme[4,11,12] and his group became interested in this subject a few years ago and reported a series in which correction of the condition was accomplished with a modified Shirodkar operation. This surgical procedure was originally described in India and reported in America by Barter[2, 3] in 1955. Durfee,[5] Picot et al,[10] McDonald,[9] and others have reported series using various modifications of the Shirodkar operation by closing the cervix with different suture materials. In the different series reported by the above authors, no case of an incompetent cervical os was found in a primipara. In my opinion, the following case history in a 29 year old primigravida provides indirect evidence in support of the theory of a congenitally weak or defective cervix.

Case History

Mrs. F. L. is a 29 year old woman who has been married eight years. No contraceptives have been used for the past six years. She was referred in November, 1958, for infertility investigation and treatment. Her husband was referred to a urologist who found him to be a normal potent male.

Pertinent facts in the patient's past history: There was a history of rheumatic fever in childhood and subsequent bilateral arthritic changes in the hip joints with sclerosis and cystic changes in both femoral heads. The femoral heads and necks were deformed and their appearance suggested old Legg-Perthes' disease or subcapital femoral epiphysis. She had had an appendectomy at age 16. Her hip condition had been cared for by an orthopedic surgeon who injected hydrocortone in joints on two occasions, the last time being October, 1958. Her menses were normal with onset at 12 years, interval, 27-31 days; duration, 5 days; there was moderate, painless flow. Blood pressure: 114/80. Hemoglobin 13.2 gm. BMR -14. A hysterosalpingogram was done on December 9, 1958, and patent Fallopian tubes were found. The uterus and cervix measured 6½ cm. She was seen March 21, 1959, with the history that her last menstrual period was on February 9, 1959, and her date of delivery was calculated to be November 16, 1959. The Friedman and frog tests performed during late March, 1959, were positive for pregnancy.

On May 23, the patient began to spot and had mild cramps. Examination at that time revealed a closed cervix and a diagnosis of threatened abortion was made. The symptoms subsided on bed rest, sedation, and large doses of progesterone. The prenatal course was uneventful until September 1, 1959, during her 26th week of gestation (by ovulatory estimation) or her 28th week (by estimation of last menstrual date). At this prenatal visit she felt fine but casually mentioned a vague discomfort in the lower abdomen and a stinging sensation in the vagina.

Speculum examination revealed a cervix dilated 2½ cm. and bulging membranes protruding from the cervical os but there were no uterine contractions. She was sent immediately to the hospital, and about two hours after admission, a Shirodkar operation as modified by Dr. Stromme, using ox fascia and securing it with 3-0 silk was carried out. She had a smooth postoperative course and was discharged on the tenth postoperative day. Vaginal examination on the day of discharge from the hospital showed minimal reaction about the silk sutures.

On September 17, 1959, one week after being home, she phoned and said she had passed something from the vagina. She had saved it and was told to go immediately to the hospital. Examination showed the thong of ox fascia had sloughed out, and the cervix was dilated 3 cm. and membranes were bulging. A repeat Shirodkar was done, and the cervix was snugly closed. For two days postoperatively, she had mild cramps, which subsided on bed rest and massive doses of progesterone.

On September 23, 1959, after several smooth postoperative days, the patient's membranes ruptured and active labor ensued. Speculum examination revealed the ox fascial strip holding the cervix closed snugly. With such strong active labor and amniotic fluid draining freely, it was decided to take down the ox fascia strip and let labor proceed.

After eight hours and 31 minutes, the patient delivered a four pound, two ounce male infant spontaneously. The infant has thrived and done well, and this case illustrates that the vigorous efforts used, which gave the baby 23 more days of intra-uterine life, greatly enhanced its chances of survival.

Summary

This case is presented in support of the thesis that congenital weakness of the cervix is an etiologic factor in incompetency of the cervical os. The cervix and uterus in this patient measured 6½ cm., which is smaller than normal. Gently measuring the size of the cervix and uterus by passing a small uterine sound and insertion of a Rubin cannula for hysterosalpingogram cannot be indicted as a traumatizing factor in producing the syndrome.

The incompetent os in a primipara has not been reported to date to my knowledge. Stromme has stimulated us in the Minneapolis area to be on the alert for this condition. This, at least, is one area in which efforts directed toward increased fetal salvage appear to be rewarding.

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Effective topical use of antibiotics requires awareness of the limitations involved. It should be understood whether the infection is primary or secondary. Resistance of organism to the proposed therapeutic agent, frequency of cutaneous sensitization and the efficacy of the vehicle are some of the important factors to be considered.

chloro—

neo—

baci—

strepto—

Topical Antibiotics

tetra—

peni—

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ANY DISCUSSION of topical therapy must be qualified by a consideration of several important factors governing its success or failure. Accurate diagnosis is the first of these factors to be considered. In addition there are local and systemic conditions that will influence the course as well as prognosis of cutaneous infections. In the selection of a proper therapeutic agent, it becomes important to consider all factors which may affect this onset or course. These principles were important in the use of topical chemotherapeutic agents and are just as important in the selection of proper topical antibiotics.

Sulzberger and Baer suggest that the value of topical antibacterial agents may be gauged or measured by the following points: 1) efficacy and spectrum; 2) allergenic potential; 3) degree of irritancy and local toxicity; 4) degree of systemic toxicity; 5) value of the agent for systemic administration; 6) stability in various vehicles and at varying temperatures; 7) acceptability to the patient; 8) cost to the patient. Livingood and Mullins add; 9) the tendency for the development of cutaneous moniliasis at the site of application; 10) the tendency for the development of resistant strains of bacteria on prolonged topical application.

The selection of a topical agent in immediate therapy is governed by the knowledge of the organisms most frequently responsible for cutaneous infections as well as the degree of resistance of these organisms to the antibiotic selected.

The resistance of the staphylococcus is becoming an increasingly important and difficult problem. It has greatly reduced and all but eliminated the effectiveness of penicillin in treatment of skin infections. Infections resistant to penicillin have become more common among hospital patients than in patients seen in the community at large. The high degree of cutaneous sensitization produced by the topical application of penicillin has further reduced the usefulness of this antibiotic in the management of cutaneous infections.

Various culture studies carried out on the miscellaneous group of skin infections indicate that the staphylococcus is the dominant organism in 85 to 90 per cent of cases. These studies applied to both the primary cutaneous infections

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such as impetigo, echthyma, folliculitis, furunculosis, as well as to secondary infections complicating conditions such as contact dermatitis, atopic eczema, infestations, and seborrheic dermatitis. The next most frequently found organism is the streptococcus. The increased incidence of troublesome staphylococcal infections has made proper selection of the antibiotic through laboratory tests of paramount importance. Empiric topical therapy instituted early may be later corrected with the use of a proper antibiotic after the bacterial sensitivity studies have been reported in the individual case. All topical therapy is governed by the effectiveness of any agent against the staphylococci. The development of staphylococcic resistance against a particular antibiotic renders that agent almost useless in the management of skin infections.

Fortunately, the development of a greater variety of antibiotics has made up for the loss of penicillin as a topical therapeutic agent. Among the firist of the broad spectrum antibiotics were the tetracyclines. Originally, they exhibited ability to deal with the majority of staphylococcal infections. However, most recently the tetracyclines are following a pattern similar to that of penicillin. There is increasing resistance to this group of antibiotics found in staphylococcal sensitivity studies. Here, too, the resistance is far greater in the hospital group than in the general public. This group remains effective mainly in sterptococcal infections. For topical use the tetracylines are effective in a grease base but have the disadvantage of a yellow color.

The lack of toxicity at the usual therapeutic level with oral or parenteral administration makes this an important group for use in combating serious systemic infections. It appears advisable to spare this group from use as a topical antibiotic, avoiding cutaneous sensitization as well as bacterial resistance. The loss of this group would be very serious, for there is no reason to believe that as an antibiotic is lost to use, new ones will be discovered to replace it. The prolonged use and frequent topical application may well cost us the effectiveness of many of our useful antibiotics.

Neomycin is the most popular of the topically applied antibiotics at present. As yet its effectiveness against the staphylococcus remains high. Its wide use justifies greater detail in the discussion of this agent. Neomycin was isolated by Waksman and LeChevalier from Streptomyces Fradiae — and proved to be a substance containing three fractions listed as Neomycin A, B, and C. Neomycin sulphate is largely a salt of Neomycin B with a smaller portion of Neomycin C sulphate. Neomycin owes some of its dermatologic popularity to the fact that its parenteral use is limited, manifesting its toxicity by deafness and impaired renal function. So far the degree of resistance developed to this antibiotic has been small. This agent has a number of advantages. It is quite stable, colorless and readily soluble in water. In dry form it is stable for at least a year when stored at room temperature. It has been shown to be non-toxic to epithelial cells growing in tissue culture. Other antibiotics such as chloromycetin, bacitracin and the tetracyclines have been shown to be more toxic for tissue culture epithelial cells. Neomycin has been found to be more effective in treating surface infections caused by Pseudomonas and Proteus organisms. Livingood pointed out that neomycin is not as effective as tetracycline if on culture, streptococcus pyogenes is present. Both Bacitracin and aureomycin are more effective against this pathogen. Due to the similarity of chemical structure there is some cross sensitivity of neomycin and streptomycin. Unfortunately since the original report of dermal sensitization in 1952, there have appeared further reports of contact dermatitis developing from the topical application of neomycin.

Cutaneous sensitivity to neomycin is not readily apparent in the patient being treated. It is an insidious process with gradual aggravation or progression of the eruption. In most of the cases reported, contact sensitization was not manifested by an acute exacerbation. An acute exacerbation may occur, but in the greater number of cases there is simply extension of the dermatitis. The obvious failure of response to a presumably effective agent and the spread of eczema leads one to suspect sensitivity. On the other hand, one must bear in mind that commonly one may fail to recognnize the presence of a pre-existing skin disease in the case of secondary bacterial infection. The lack of improvement of dermatitis on which one is applying a steroid and neomycin combination should arouse one to the possibilty of cutaneous sensitization. Sensitization is not readily established by patch testing. According to Epstein the lack of positive patch test response in some patients who appear to have developed neomycin sensitivity is due to dermal sensitization. Evidence of sensitivity developed more readily in intertriginous areas or parts of the body that were more subject to maceration. Despite the threat of cutaneous sensitization, neomycin topically is a very effective agent to be used in staphylococcal infection.

Bacitracin was discovered in 1943, and has been used with benefit since. It is produced by a gram positive aerobic spore forming bacillus, Bacillus subtilis. Bacitracin is an effective antibiotic against gram positive aerobic and anaerobic organisms, but does not affect as broad a group as that covered by neomycin. It is also effective against certain gram negative cocci, though the majority of gram negative organisms are not affected. It is most effective in concentrations of 500 units per gram of ointment base. Bacitracin has a low sensitizing potential and the degree of skin involvement reported has been small. Though not stable in solution for long, Bacitracin may be used as a wet compress on concentration of 1000 units per cubic centimeter.

Chloramphenical is another antibiotic which is very effective in its action against staphylococcal infections. Bacterial resistance to this agent has developed rather slowly. Though chloramphenicol is non-irritating to the skin, severe epidermal sensitization has been known to develop. This antibiotic has the advantage of being available in a non-staining greaseless cream especially useful in hairy areas. This water-miscible base allows for greater availability for the dispersion of the chloramphenicol, thus enhancing its effectiveness. However, one feels that an effective systemic antibiotic should be reserved only for such use.

Most cutaneous pyodermas can be treated with a single antimicrobial agent. Any antibiotics that is effective against the staphylococcus will be effective if only that organism is present. There is however, a very significant number of cases, varying from 35 to 40 per cent, in which there are mixed staphylococcal and streptococcal infections. One may encounter the infrequent case of pure streptococcal cutaneous infection. Bigger and Hodgson state that very few cases of impetigo are purely streptococcal. Gram negative bacillary infections of the skin must not be overlooked. When present, these organisms offer a great deal of resistance to therapy. The gram negative bacillary mixture is found more in chronic or long standing processes as in leg ulcers, intertrigo, otitis externa, and may be an important factor in their delayed healing. There are to be found, more frequently, mixed types of infections which include gram negative bacilli, streptococci, Proteus, Pseudomonas and Candida albicans. Awareness of the above types of involvement to explain why a particular topical antibiotic has failed. Neomycin alone frequently cannot cope with streptococcal involvement. It is also variable in its action against B. Proteus, pyocyaneus and coliform bacilli. Tetracycline is almost useless against these organisms which have become more prominent partially as a result of the extensive use of antimicrobial agents. The staphylocidal agents have reduced the numbers of the staphylococci present, altering the bacterial flora and allowing the overgrowth of the less common organisms. Chloramphenicol is a better agent in the face of gram negative infections than neomycin or the tetracyclines. The effectiveness of some of the antimicrobial agents when used alone is so variable that combinations are frequently offered. The weakness of neomycin against streptococci may be offset by using it in combination with bacitracin or gramicidin. Cutaneous moniliasis does not occur following the application of bacitracin, polymyxin B, tyrothricin and gramicidin. Polymixin (aerosporin) owes its importance in such mixtures to the fact that it is valuable when used against gram negative organisms and some fungi, and is particularly effective against pseudomonas aeruginosa. Most of the combinations are unnecessary.

The effectiveness of various agents in the treatment of bacterial infections of the skin is dependent not only on antibacterial spectrum but upon the vehicle in which it is employed. There are disadvantages as well as advantages in the employment of ointments and cream bases. The rate of liberation of the antibiotic may vary considerably between a water miscible and a greasy base. There may be inadequate liberation by the grease base. The base may also serve to trap fluids, prevent evaporation, and interfere with radiation of heat from certain lesions. Healing may be retarded also. Many times the response to an antibiotic is better when it is applied in an aqueous solution or water miscible base. Livingood asserts that one milligram of neomycin per cubic centimeter of aqueous solution is as effective as five milligrams per gram in an ointment base. The use of an ointment base appears to be wasteful of the active principle. The application of broad spectrum antibiotics in aqueous solution as compresses or soaks is frequently more effective than an ointment. Unfortunately many of the antibiotics are unstable in solution. Neomycin is both stable and effective for long periods of time. Chloramphenicol 0.5% may be stabilized in solution for approximately one month by adding Borax 0.3% and Boric acid 1.5% in wate. An aqueous solution of aureomycin can be used effectively by preparing and frequently renewing small amounts of the solution. The value of aquaeous solution or water miscible bases has been sharply demonstrated after similar concentrations in a grease base have failed to produce clinical improvement.

As one reviews the care of cutaneous infections before the advent of antibiotics, one recognizes the value of many agents that have not been cast into absolescence. The bacteriostatic effects of dyes, organic iodides, and mercurials still have some merit. There have been added other synthetic topical chemotherapeutic agents such as hexachlorophene, nitrofurans and Triburon. The last two are more recent and welcome additions.

Furacin (nitrofurazone), a yellow crystalline substance is bacteriostatic and bactericidal for a number of gram positive and gram negative pathogenic bacteria, supposedly acts by interference with the enzyme system of bacterial respiration. It is relatively insoluble in water, but is used as a 0.2 percent solution in a mixture of carbowaxes and propylene glycol. The base is non-irritating and non-toxic, liquifies at body temperature and can be washed off easily. It is unlikely to produce contact dermatitis if used in the care of the acute problem for a limited period of 7 to 10 days and is not applied on surfaces overlying a large vascular bed. Reported high incidence of reactions from topical application may be due to prolonged exposure.

Triburon is a new bisquarternary compound derived from B-ionine triclobisonium chloride (Triburon chloride). It has high bacteriostatic and moderate bacteriocidal activity against gram positive and gram negative organisms.

The impetus for the development of this microbicide came from the apparent need for a satisfactory agent that would remain effective against the increasing number of antibiotic resistant pathogens. Triburon has been reported to be active against staphylococcus aureus, staphylococcus albus and streptococcus pyogenes in vitro and vivo. A number of enthusiastic reports have been published listing a variety of dermatitides that have been benefited by the topical use of this agent. The writer has had very little experience with Triburon. There are no reports of cutaneous irritation or sensitization but more time may be necessary to properly evaluate this. Triburon is commonly applied in a 0.1% ointment utilizing a carbowax base. There are also reports of its effective use in a wet compress.

Summary

Before accepting the antibiotics readily for topical use, there are certain notes of caution which should be offered and qualification to be fulfilled. Good therapy can only be carried out after the application of accurate diagnostic measures. Though we have these fine specific therapeutic agents available, one is still responsible for recognizing the factors which set the stage and help perpetuate cutaneous infections. Frequently the underlying problem — as seen in infestations — must be corrected in order to clear up the infection. A pre-existing skin disease is commonly masked by the secondary bacterial infection. We know also that long standing bacterial infection may result in the development of a chronic eczematous dermatitis — that will be persistent after the infection has cleared.

If at the end of 7 to 14 days of topical antibiotic therapy there is persistence of the dermatitis, re-evaluation of the agent as to antibiotic effectiveness, bacterial resistance, local sensitization or existance of primary underlying cutaneous disease should be made. These words of caution merely serve to underline the fact that the discovery and successful use of the antibiotics in skin infections mark a real turning point in the treatment of skin conditions.

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WHAT IS YOUR DIAGNOSIS?

The patient was an eighteen year old, unmarried girl with onset of illness approximately three months prior to her admission to the hospital. She had lost approximately twenty-five pounds. There had been no nausea or vomiting though she had noted intermitten episodes of gassy eruptions and hyperacidity which was relieved with milk. Bowel function was normal. There had been no evidence of melena. The menstrual period had been delayed ten days and was associated with heavy flow and clots, but in the past two months the menstrual periods had been normal. She was admitted to a hospital having felt faint and dizzy for three days. She felt no pain.

The physical examination revealed the patient to be pale. Blood pressure was 146/78, pulse 76. The abdomen was soft. Rectal examination was negative, and no mass or tenderness was elicited in the pelvis by digital examination.

Hemoglobin was found to be 6.9 grams, red cell count 2,130,000. Leukocytes and differentials were normal.

After five units of whole blood, the hemoglobin was found to be 14.5 grams, hematocrit 44 volume.

Fluid from the peritoneal cavity revealed an abundance of xanthochromic type fluid.

Numerous other laboratory and X-ray studies were done, all of which were reported to be negative. An operation was done and the diagnosis definitely established.

See Page 253
For Answer

Complete loss of the scalp can produce great disfigurement and psychic trauma. However, proper management of this drastic accident can minimize the consequences and allow almost complete restoration of the normal appearance. This article describes and illustrates a satisfactory technic for such restoration.

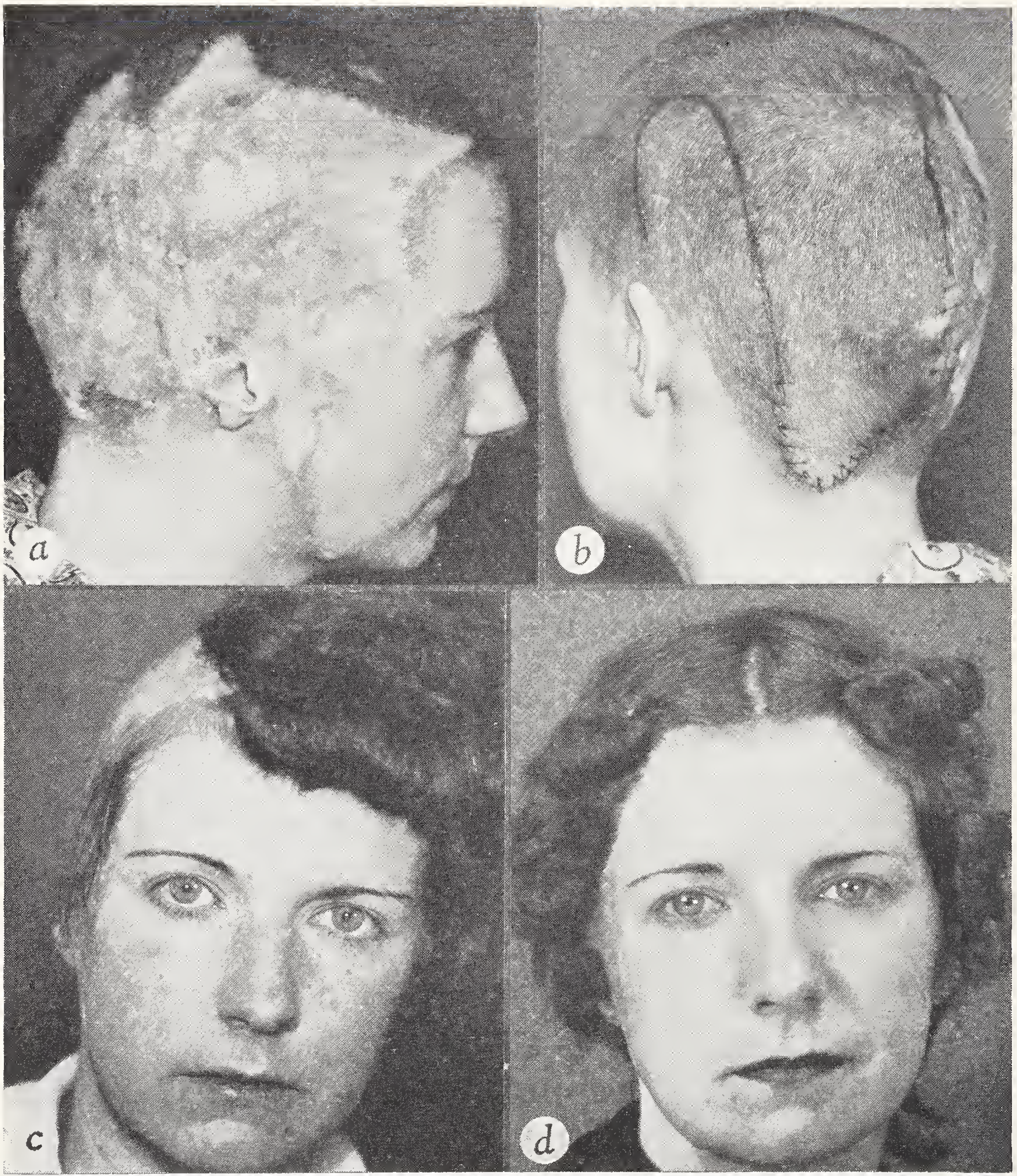

Fig. 1. a. Loss of scalp on right side of head. The area has been skin-grafted. b. Hair-bearing flap of scalp tissue being elevated in stages. Eventually, it was transferred to the right side of the head to produce a more normal hairline anteriorly. c. Front view of defect. d. Appearance after transference of pedicle flap of hair-bearing skin.

Total Avulsion of Scalp

JOHN B. ERICH, M. D.
Rochester, Minnesota

ALTHOUGH PARTIAL loss of scalp tissue is fairly common in automobile and industrial accidents, total avulsion of the scalp is encountered very infrequently and usually occurs in women whose hair becomes entangled in a pump or some sort of revolving machinery.

Consequences of Loss of Scalp

The immediate and late consequences of complete loss of the scalp are never insignificant. At the time of injury, profuse bleeding and shock are prominent features of this form of trauma. Later, there arises the danger of infection and even of meningitis and intracranial abscess. Finally, the cosmetic defect issuing from such an injury is so extreme that the patient may exhibit varying degrees of psychic agitation or depression.

It is well to bear in mind that pathogenic organisms can gain access to the meninges through diploic veins that unite the venous channels in the pericranium externally with the meningeal vessels and dural sinuses internally.[1]. Although intracranial infection is a potential possibility in avulsion of the scalp, it is today an uncommon complication because of current methods of treatment and the use of antibiotics.

Anatomic Considerations

As has been pointed out by others,[1-3] a microscopic survey of the layers of tissue forming the scalp reveals the reason why in avulsion everything is torn away down to the pericranium, the periosteal covering of the cranial bones. The scalp is composed of five layers, namely the skin, the subcutaneous fat, the galea aponeurotica, the subaponeurotic areolar tissue and the pericranium. The upper three layers, often called collectively the "epicranium," are so closely adherent one to another that they usually do not separate in avulsion but are ripped off as one stratum of tissue, exposing the underlying pericranium. Peculiarly, the pericranium itself is rather loosely attached to the cranial bones except along the suture lines; consequently, it can be torn, displaced and rolled up to expose large areas of denuded bone.

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* Mayo Clinic and Mayo Foundation, Rochester, Minnesota.

Early Treatment Is Important

In considering partial loss of scalp tissue, the main objective of treatment in addition to epithelial coverage is one of cosmetic appearance. In other words, the surgeon is concerned with the preparation of hair-bearing skin flaps that are elevated in the remaining parts of the scalp and are transferred to produce a more normal hairline and to minimize the ultimate deformity (fig. 1).

In the care of patients with total loss of the scalp, however, treatment is directed toward early skin coverage of the denuded cranium, thus preventing unnecessary scarring, particularly on the forehead, where the eyelids can be severely distorted by dreadful cicatricial contractures. Ectropion of one or both upper eyelids is not uncommon when the application of skin grafts to the forehead is delayed; in fact, cases have been reported in which the ectropion was so severe that exposure of the globe resulted in loss of the eye.[1] Occasionally, circumstances may be such that it is inadvisable to skin graft the entire cranium in one operation; if such is the case, it always is preferable to skin graft the forehead first, thus preventing in great measure the development of scar tissue that would distort the upper eyelids.

In cases of total avulsion of the scalp, if raw surfaces and exposed bone are not covered with skin grafts but allowed to granulate slowly and epithelize spontaneously, the resultant scar tissue has a tendency to break down easily under the slightest trauma to form an ulcer that may require weeks or months to heal. In addition, the possibility is always present that these scarred zones may undergo carcinomatous degeneration.

Technic of Care

The immediate care of a patient with total loss of the scalp involves the following measures: (1) ligation of all large bleeding vessels and coagulation of small vessels to control hemorrhage; (2) treatment of shock; (3) transfusions of whole blood, if necessary; (4) injection of morphine for control of pain; (5) administration of antibiotics to prevent infection. The head wound itself should be thoroughly irrigated with a solution of saline and hydrogen peroxide. Subsequently, I prefer to cover the wound with a layer of gauze impregnated with nitrofurazone (furacin) ointment, after which a pressure dressing is applied. Further care of the avulsed zone should be deferred until the patient's general condition is no longer critical and will tolerate general anesthesia. At that time, the wound can be further cleansed with saline and peroxide. Shredded pieces of tissue are removed, and loose flaps of skin around the periphery of the injured region are replaced and sutured; torn bits of pericranium are unrolled, replaced and sutured with fine catgut. Without waiting for a granulating surface to develop, I have found it helpful to proceed immediately with the application of split-thickness skin grafts obtained from the abdomen or thighs. As previously mentioned, the forehead should be grafted first. The best cosmetic result can be obtained if the sheet of skin is large enough to reach entirely across the forehead. If the wound can be grafted within a few hours after the injury, I do not hesitate to place thin split-thickness skin grafts directly over exposed bone even though some of the pericranium may have been lost. Fortunately, the greater part of such grafts usually takes satisfactorily.

Delayed Treatment.—However, if a patient with total avulsion of the scalp is not seen for several days after the injury, the use of free skin grafts applied directly over exposed bone is inadvisable. In such cases, it formerly was thought best either to drill holes into the outer table of the denuded cranium or to chisel down the cortex until a bleeding surface was obtained. By such technics, bleeding areas would lead to the development of granulations that would grow to eventually cover all of the exposed bone. However, waiting for the development of such a granulating surface before skin grafts can be applied requires weeks or months, during which time dense scar tissue forms and leads to unsightly contractures. Moreover, as shown in figure 2, when the entire wound is allowed to granulate before skin grafts are applied, the grafted areas do not possess a smooth appearance but are rough and irregular. Instead of waiting for a granulating surface to appear, it is far preferable to chisel down the outer table of the cranial cortex until one encounters bleeding bone, over which split-thickness skin grafts are immediately applied (fig. 3). These grafts usually take well and result in a smooth, cosmetically acceptable surface. It is true, of course, that skin grafts placed directly on bone do not

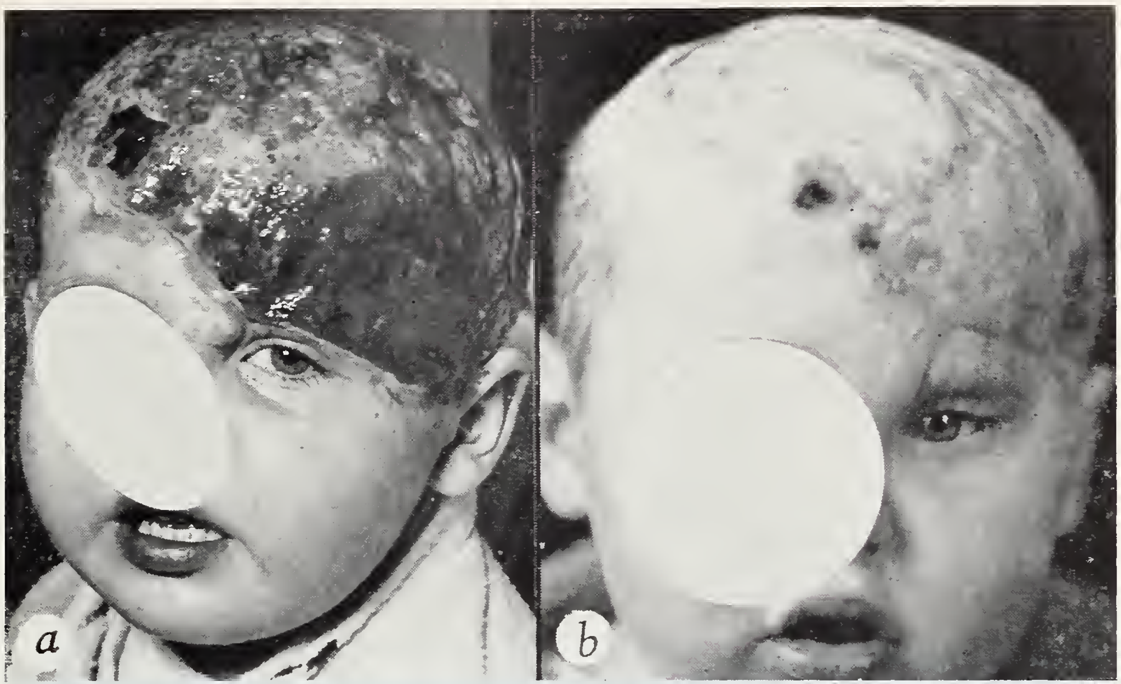

Fig. 2. a. A 3-year-old girl with avulsion of most of scalp after hair was caught in gasoline motor. Because this patient was treated almost 30 years ago, the wound and exposed bone were allowed to granulate over for 4 months before split-thickness skin grafts were applied. b. View of patient after the denuded area was grafted, showing irregularity and roughness of the skin surface and scarring in the region of the left eyebrow.

prevent sequestration of small zones of osseous tissue, which may come away as small spicules of dead bone weeks or months later.

Should the Avulsed Tissue Be Salvaged?—It has been suggested that the detached piece of scalp, if found at the time of the accident, be sutured in place. However, such a mass of tissue likely would be infected and would be too thick to remain viable; it soon becomes necrotic and only delays healing of the wound. Some surgeons have suggested mounting the avulsed portion of scalp on a dermatome and shaving off a split-thickness graft, which is applied to the denuded surface of the head. However, the only reason for using this skin of questionable viability would be for the transference of hair-bearing epidermis. Unfortunately, the hair follicles in the scalp extend well into the suepithelial fatty layer, and a split-thickness graft would not possess enough of each follicle to grow new hair.

Value of a Wig.—The final consideration in the treatment of the patient with total avulsion of the scalp is the preparation of a wig or some form of transformation to conceal the skin-grafted head. This matter is of extreme psychologic importance to the patient, and it is helpful if the surgeon can direct the patient to a competent wig manufacturer.

REPRESENTATIVE CASE

The case that I especially wish to present in this paper is illustrated in figures 3 and 4. This patient's hair became entangled in an oil-well pump, and the scalp, including the skin over the forehead, was completely avulsed, leaving the pericranium over the frontal, lower temporal and occipital regions intact. However, the top of the cranial bones was completely denuded of periosteum and epicranium (fig. 3a). The patient was under the care of her home physician for 2 weeks, after which she was sent to the Mayo Clinic for skin grafting. The large wound was free of bacteria. Therefore, she was taken to the operating room the day after admittance to the hospital. With the patient under general anesthesia, two large split-thickness skin grafts from the abdomen were secured; one was stretched over the entire forehead and the other was adapted to the top of the cranium (fig. 3c). Just prior to the application of these grafts, the exposed bone denuded of pericranium was shaved down with a mallet and chisel until bleeding was encountered (fig. 3b). On removal of the pressure dressing 7 days later, the skin grafts were found to have healed very satisfactorily. A week later, the remaining part of the wound on the back of the head was covered with two drums of split-thickness skin obtained from the thighs. All the grafts took well and made an acceptable epithelial covering for the cranium (fig. 4a and b). By the early application of these skin grafts without waiting for granulations to form, the forehead was smoothly covered with skin, preventing any cicatricial distortion of the eyelids or eyebrows (fig. 4a and b). Later, the patient had a wig prepared (fig. 4c).

The technic of chiseling the exposed cranial bone that is denuded of its periosteum until a bleeding surface is encountered and the immediate application of a split-thickness skin graft is essential if an acceptable cosmetic result in total avulsion of the scalp is to be obtained in a relatively short period.

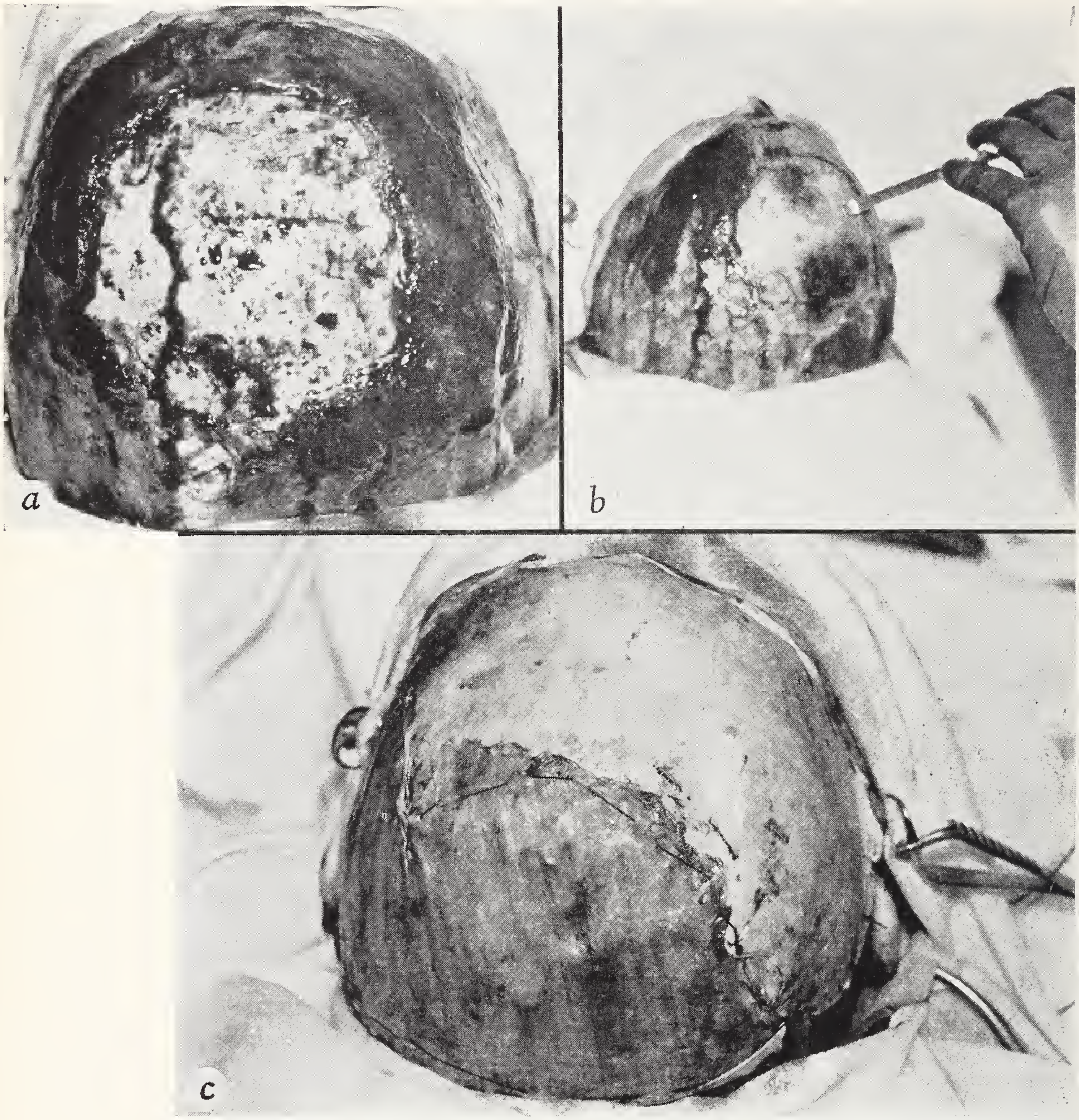

Fig. 3. a. Complete avulsion of scalp, including all of skin on forehead, with exposure of top of cranial bones. b. Without waiting for granulations to develop and cover the bone, a chisel was used to shave down the exposed cortical bone until a bleeding surface was encountered. c. All of denuded surface covered with two drums of split-thickness skin graft.

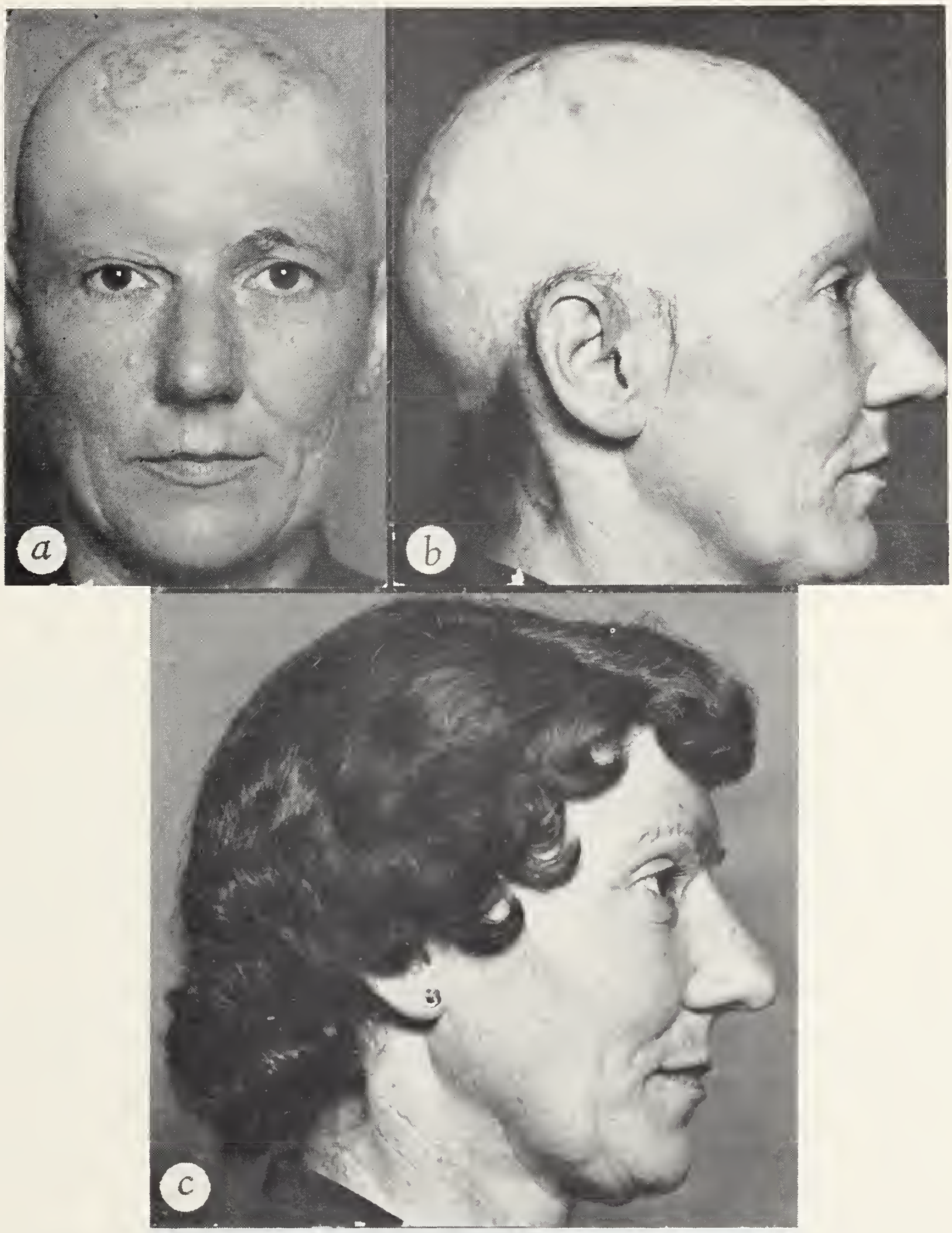

Fig. 4. Same patient shown in figure 3. a and b. Appearance after cranium was completely covered with split-thickness skin grafts. Note that the forehead is smooth and there is no cicatricial distortion of the upper eyelids. c. Appearance with use of wig. The right eyebrow was reconstructed from a full-thickness hair-bearing skin graft obtained from the back of the neck.

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The History of Medicine

in Sherburne County Prior to 1901

By JOSIE W. PFEIFFER, Elk River* and DR. ROBERT ROSENTHAL, St. Paul

The history of Sherburne County dates back to February 25, 1856, when it came into existence by an Act of the Territorial Legislature. It was named in honor of Judge Moses Sherburne, one of the supreme judges of the territory. He was practicing law in St. Paul at the time of his appointment by President Pierce, but subsequently moved to Elk River where he died in the late 70's.

When the county was created in 1856, Joseph Brown's home in Big Lake Township might well have been considered the County Seat. However, at one meeting in January the board of County Commissioners arrived to find its county seat in ashes.

The judicial affairs of the county were then conducted until 1862 at Sauk Rapids, but in that year were again moved to the Brown home. Orono, now a part of Elk River, was the seat of county business for some time; then Elk River became the seat of justice.

The first meeting was at the Nickerson home in 1867, and it was 1877 before the county had a frame building to house its offices and court rooms. The first court house was built on its present site.

The medical history of the county began in 1873 when its first Doctor — N. K. Whittemore — settled here.

In the years that followed up to 1900, it has been found that there were less than twenty different men who practiced medicine in the county. Some of these were licensed by exemption, some had no license recorded in Minnesota, some were in the county for a very short time and very little information about them is available.

During those twenty-seven years, there were several epidemics, some more severe than others, which meant that Dr. Whittemore had to travel long distances, by team and on trains, many times in the caboose of freight trains, and had to spend nights as well as days fighting the spread of the disease. After a few years other doctors came into the county, lightening that burden. Thus, we find in the official listings of 1890, four physicians in Sherburne County: one in Elk River (Dr. Whittemore), two in Clear Lake (Drs. Baldrige and Stacy) and one in Blue Hill (Dr. Crothers).

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* Mrs. H. J. Pfeiffer, nee Josie M. Whittemore, is a daughter of the late Dr. N. K. Whittemore, the first physician to settle in Sherburne County.

In 1895 and 1898 only two are officially listed (Drs. Whittemore and Stacy), although there were others who for some reason were not listed in the medical directories and some who were not properly licensed.

In 1881 there was an outbreak of small pox in the county when many woodsmen were brought to Elk River, who were suffering from the disease. In the emergency, small shacks were built in which to care for these cases, on a farm then owned by Dr. Whittemore, a few miles east of town.

In 1893 and '94 came a very severe epidemic of diptheria and many cases of mumps in Elk River and throughout the county. Many lost their lives in this epidemic as well as in a later one in 1899. During the 1894 scourge one or two houses were burned as a precautionary measure, and the village was asked to build new ones for the stricken families.

In 1897 we find recordings of an influenza epidemic, and in 1898 many cases of whooping cough appeared throughout the county.

One of the disasters which Elk River suffered was a fire in 1898, which destroyed a large portion of the business district, including Dr. Whittemore's office. His office was burned again in 1903 when many of the rebuilt business places were again destroyed.

We find also records of destructive storms which occurred in July, 1897, destroying much property in MeadowVale, Livonia, Otsego and Becker. These resulted in some injuries, although no loss of life is recorded.

Biographical Sketches Of Pioneer Physicians

Sara M. Ayars, hygienic and magnetic physician in Elk River, Minnesota, advertised in the ELK RIVER WEEKLY NEWS of January 29th 1880: "Graduate of the Hygeio (sic)-Theraeputic College. Swedish movements and electricity. Ladies patronage especially solicited. Consultation free 9-1 tf." She was probably an itinerant quack as the card appeared only in that issue.

James Baldridge was born in 1842, at Shushan, N. Y. and graduated from the University of the City of New York in 1869. He came to Minnesota some time after his graduation and was licensed to practice May 26, 1887. Coming to Sherburne County, he settled in Clear Lake where he practiced until the time of his death, October 11, 1889. He suffered a fatal heart attack and was taken to New York for burial. Dr. Baldridge was of a very retiring nature and lived alone where he maintained both home and office; he never married. In spite of his retiring nature, he was well liked and respected in Clear Lake, for at his death, the local paper said "He will be missed here, for beside being a good physician, his quiet and unassuming manner had gained him many friends."

George Buchanan lived and practiced in Santiago from approximately 1885 to 1895. The date or place of his birth is not known. He married Miss Florence Thompson of Santiago, and they had two daughters. About 1895 they moved to Arizona where he presumably lived until his death.

He is probably identical with Dr. George C. Buchanan who was licensed in Minnesota November 3rd, 1884 (No. 976). A search by the Arizona Pioneer's Historical Society and the Department of Library and Archives of the State of Arizona failed to turn up any evidence of him.*

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* A Dr. George (or C. G.) Buchanan is listed as practicing in Little Falls, Morrison Co., in 1890; in Henning, Otter Tail Co., in 1896 and 1898; in Wadena, Wadena County, in 1900 and in Mora, Kanabec County, in 1903 and 1909. It was impossible, however, to establish a definite relationship to Dr. George Buchanan of Santiago.

T. A. Caldwell. In the Sherburne County Star News of July 29, 1880 is this notation: "Dr. T. A. Caldwell from Manchester, Ill. has come to make his home in Elk River, and practice with Dr. Mitchell. He has had ten years experience in medical work in Illinois, and will open a new drugstore in Elk River." This is all we know of his background. In the issue of August, 1880 we find this card: "Drs. Mitchell and Caldwell, Physicians and Surgeons" — also that the new "Model Drug Store" was opened in August. This store was later sold to and run by a Dr. John Crawford, who apparently was in Elk River only for a short time.

There is some confusion about the drugstore. According to other information, Dr. Caldwell sold his interest in the store to Dr. Crawford as early as 1875.

James Chapman is listed in Clear Lake in 1886 and 1890. He was not licensed in Minnesota and nothing more is known about him.

John Crawford came to Elk River in 1875 and bought, as mentioned drugstore from Drs. Mitchell and Caldwell. He left Elk River in 1880, selling his home to Dr. Whittemore, who lived there until his death in 1907. Dr. Crawford apparently did not practice medicine in Sherburne County. Nothing is known of his medical background and qualifications. He may have sold the drugstore from Drs. Mitchell and Caldwell. He left Elk River in 1880, selling

John Riley Crothers supposedly was born in Clinton County, Indiana in 1841, but as he was fifty-seven years, ten months and fourteen days old when he died December 29, 1900 his birthdate should be February 15, 1843. His parents were Scotch-Irish; his mother died while he was still an infant. Adopted by a family named Brindley, he came to Richland County, Wisconsin as a youngster and grew up there. At the age of about twenty he enlisted in the army from Gardner, Kansas and served in the Civil War from January 1862 until January 1863 in the 1st Kansas Battery. He was promoted from private to orderly sergeant and his captain commended him for faithfulness to duty and soldierly obedience in the battles of Cane Hill, Prairie Grove, Chattanooga, Johnsonville, Nashville and others. During a furlough in 1863 he married Lena A. Morgenstern. It was during his war service that he began his medical studies under a Dr. Marshall. He apparently never completed a regular medical course and there is no evidence that he graduated from a medical school.

It is not known when he came to Sherburne County, but he settled there in Blue Hill, a farming community. He was licensed in Minnesota by exemption on the basis of an "87 affidavit." It seems he was a conscientious practitioner, although his methods were somewhat at variance with the regular practice of medicine. He used mainly homemade drugs and herbs and cared for the sick as he had learned in the army. It no doubt was helpful to the community that he taught others to carry on his work when no physician was available.

Dr. and Mrs. Crothers had eight children. He supposedly stayed in Blue Hill until about 1897 or 1898 when he moved to Liberal, Kansas. According to his obituary, however, he came to Kansas about eight years before his death, which would be about 1892. He was a chronic invalid for many years and died December 29, 1900 from a failing heart due to chronic rheumatism.

Dr. Crothers was a member of Rogers Post G.A.R., Elk River. He was survived by his wife and five of his children.

W. E. Du Bose, (also De Bose) was located for a time in Becker, having arrived there in July, 1897. He was spoken of at that time as "The right man in the right place." In October, 1897 he moved to Big Lake, where Mrs. Du Bose, who had been in St. Paul, joined him. They lived in Big Lake for several years. They had a daughter, Florence, who worked at one time in the Marquette National Bank in Minneapolis. Dr. DuBose practiced in Big Lake, Becker and Blue Hill where he had much success and was well liked. He was not licensed in Minnesota but he attended Hamline University from 1894 to 1897, and again from 1899 to 1900. He received an M. D. degree June 7, 1900. During his years of practice in Big Lake and Becker he "gained in popularity as a physician and his services were much called for and met with success" (February 17, 1898), especially during a whooping cough epidemic in 1897, and the diptheria epidemic which swept the county in the winter of 1899. He left Big Lake and Sherburne County soon after in 1900.

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* Obituary in The Liberal News (Kansas), January 8, 1901 (Kansas State Historical Society).

Joseph Eucher Du Fort, (Dufort) is said to have lived and practiced in Clear Lake before 1900. He was born in Canada April 18, 1875 and studied at the University of Montreal between 1895 and 1899, but there is no record that he received a degree. He claimed loss of his diploma by fire. Dr. Du Fort practiced in Northome, Hennepin County from 1916 on, although he had considerable difficulties because he was not licensed. He died January 20, 1954 at the age of seventy-eight.

H. P. Garlick was born in England in 1833, but nothing is known of his early life. Later he settled in Clear Lake and married a Mrs. Jones who owned an attractive and well known summer resort on the shore of Brigg's Lake in Palmer Township. Dr. Garlick died there in August, 1886 at the age of fifty-three years, and was buried in the Clear Lake Cemetery. An elderly resident of Clear Lake recalls that Dr. Garlick did practice medicine and also that when she was a child, he extracted one of her teeth as she sat on the lawn. No further information about him is available.

Elam Stiles Gibbs of Monticello, Wrigh County, owned a farm in Sherburne County. In the spring of 1883 he bought a large team with the intention of breaking up some new land. Dr. Gibbs, however, never seems to have practiced in Sherburne County. He practiced in Monticello for forty years.

J. B. Mayo. His card appeared in The Sherburne County Weekly, March 19, 1870. "Physician and Surgeon. May be consulted daily at his office unless professionally absent. Office at Elk River." Nothing more is known about him.

C. H. Mitchell was born in Princeton, Ill. (according to other information in Tiskilwa, Bareau Co., Ill.) May 2, 1954, he was graduated from the College of Physicians and Surgeons at Keokuk, Iowa. He came to Elk River in 1878 and two years later was joined by Dr. T. A. Caldwell in the practice of medicine. Together they owned the Model Drug Store. As was the custom, his card appeared regularly in The Elk River Weekly News in 1878: "Dr. C. H. Mitchell having permanently located at Elk River tenders his professional services in the practice of medical and surgery . . ." At that time he was upstairs at W. T. Stables. His office was at Thompson's Drugstore from 1879 to 1880 in Struble's Bldg., and in 1881 "over Kirby's Drugstore." An Elk River newspaper of 1880 and 1881 speaks of him as having performed many surgical operations and many successful cataract operations (the latter with Dr. Johnson of Minneapolis).

He supposedly left Elk River for Canada in March, 1881, but on December 8, 1881 a St. Cloud newspaper carried his card announcing his recent arrival in St. Cloud from Elk River with the reputation as a good physician. In June, 1882 a newspaper item relates the successful operation on the jaw of a farmer, and in July, 1883 he, with Drs. Gilman and Beebe, attended the injured after a gun fight. At about the same time, he lost his wife after the birth of their only child. In the fall of 1883 he took a trip to Montana, Idaho and Oregon, and in December he went to California for his health. It speaks for his reputation that in January, 1884 he was summoned to a camp near Fort Ripley to attend some severely injured men, to amputate a frozen thumb, and to treat some sick ones.

In March, 1884 an announcement tells of a partnership with his younger brother, Dr. L. G. Mitchell and Dr. Fitzsimmons. His advertising card, which pointed out that he gave special attention to chronic diseases and to diseases of the ear and eye, no longer appears after September, 1884. He probably became incapacitated or died late in that year as a newspaper item of October 9 mentions that his office was taken over by Dr. A. A. Noyes of Mason City, Iowa.

The Model Drug Store in Elk River was sold about 1880 to Dr. John Crawford (according to some other information, Dr. Mitchell sold his interest to Mr. B. W. Kirby).

Charles O. Scoboria was born about 1856 and was graduated from Harvard Medical school in 1880. He came to Minnesota late in the year of his graduation or in the following year. For several years he can be traced in a number of Minnesota counties (Hennepin, Wright, Stearns, Itasca, Aitkin) mainly in his capacity as special health officer appointed by Dr. Charles N. Hewitt of the Minnesota State Board of Health. In the northern counties he served as assistant to Dr. J. C. Rosser of Brainerd, health officer in charge of the infected districts, in 1882 when small pox was spreading through northern Minnesota by lumberjacks fleeing their infected camps. His reports have been praised for the vivid descriptions of the difficulties of health officers in carrying out their task of vaccinating and quarantining an ignorant, uncooperative population.*

In January, 1887 he married Miss Mary Upham of Elk River. He was located in Elk River in that year (perhaps even before), but in the summer of the same year he is said to have moved from that town to Osakis, Douglas County.

In the following year he settled in Oronoco, Olmsted County, where he was county physician for several townships.** Although he developed a good practice, he moved to Mazeppa, Wabasha County in 1891. It seems generally agreed upon that in August, 1896 he "returned" to Elk River. It seems he had been there at times between 1887 and 1895.

Dr. Scoboria was elected to membership in the State Medical Society in June, 1882, and was licensed under the new medical act of Minnesota in October, 1883. He also was a member of the Olmsted County Medical Society while he was in Oronoco and of the Wabasha County Medical Society during his stay in Mazeppa, having been president of the latter in 1893. In 1893 he was elected a member in the Southern Minnesota Medical Association.

When he came to Elk River in 1896 he established his office and carried on a successful practice. In many instances he worked closely with Dr. Whittemore, assisting him in operations; they worked together through several epidemics. Dr. and Mrs. Scoboria had no children. About 1906 they left Elk River and moved to North Yakima, Washington, where he bought a small fruit orchard. He did not practice medicine after leaving Elk River and lived in North Yakima until his death March 28, 1936.

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* Philip D. Jordan, "The Peoples Health, a History of Public Health in Minnesota to 1948," 1953.

** Nora H. Guthrey, "Medicine and It's Practitioners in Olmsted County prior to 1900," MINNESOTA MEDICINE, July, 1951, pp. 675-676.

John Stacy — Little is known of the early life of Dr. Stacy, or "Doc as he was familiarly known in Sherburne County in later years. His birthplace was London, England, and he often told the story of an injury he received when a baby; he was dropped by a nurse maid which caused an injury to the spine, and left him a "hunchback" for the rest of his life. The first that is known of him in Sherburne County is his listing in the county newspaper of December, 1874 as a "Practicing Physician and Surgeon." In 1877 he advertised his office at his residence on Church street opposite the Methodist Church in Elk River. Later, from 1890 to 1909 he is listed in Clear Lake. He was well known throughout the county and drove about the countryside in a little two wheeled "gig," with his little black bag strapped below the seat. He later owned a drugstore in Clear Lake village and another one in Becker. He lived at one time on a farm which he owned, located on the bank of Elk Lake, and later lived in Santiago, with a son, Bert Stacy, where he died in 1954; the exact date is not known. He is buried in Santiago, a small village in Sherburne County. He was licensed by "affidavit '87."

Theodore F. Stark, (J. F.?) is listed in Big Lake in 1896, which at that time had a population of only 200. Not much is known of his stay in Sherburne County. He had graduated from Jefferson Medical College in 1887 and was licensed in Minnesota December 31, 1883. (Certif. No. 603). It seems that his stay in Big Lake was of very short duration because Minnesota Directories list him in Minneapolis from 1890 through 1905. It seems, however, he was not continuously in Minneapolis because he is also listed in Hasty, Wright County in 1896 and 1898 as the only physician of this very small town which had only about fifty inhabitants at that time.

The STAR NEWS of February 11, 1897 relates that Dr. Stark of Big Lake was in town to take the train East, being called to Milwaukee because of his brother's death. The January 27, 1898 issue mentions "Dr. Stark of Hasty" as visiting friends in Big Lake.

Orville C. Trace is said to have been in Clear Lake for a short time during the early 1890's. He graduated from the University of Michigan Department of Medicine in 1884 and was licensed in Minnesota September 4 of that year. In 1886 he is listed in Villard, Pope County, and in 1890 in Rice, and from 1895 through 1909, it Little Falls. No further information is available about him.

Nathaniel K. Whittemore was born in Temple, Maine, January 1, 1848, 1848, and grew to manhood there and in Farmington, Maine. His first course of lectures in beginning his medical career was taken at Harvard College, followd by two courses at Bellevue Hospital in New York; he graduated in 1872. He came to Elk River in 1873 as the first physician to settle in Sherburne County. He continued his practice in Elk River until his death in 1907. In November, 1874 he was married to Miss Estelle Trask of Elk River. They were the parents of three children, two daughters and a son. During his thirty-four years in Elk River he took a prominent part in the affairs of the community. He served on the village council and town board, was a member of the school board for twenty years, and at the time of his death was President of the Bank of Elk River. One of the last public enterprises which called for his cooperation was the building of the bridge across the Mississippi River at Elk River. Between 1890 and 1900 he was appointed Physician for the Northern Pacific Railway and in that capacity helped care for the injured at the time of the cyclone in Sauk Rapids. He was a member of the Minnesota State Medical Association from 1881 until his death.

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* He may have come earlier to Little Falls, perhaps as early as 1890, and he may not have moved to Clear Lake until 1909 (or he may have located a second time in Clear Lake.)

The life of a country physician in his time was a rugged one, and his many difficult experiences took their toll upon his strength, for there were periods when he was the only doctor in the county, and his practice also took him into parts of Wright and Anoka counties as well. One of the interesting stories told of him was that related by his first patient. The doctor had come to Minnesota from the East to an uncle who lived on a farm in what is now St. Paul. This uncle told him about the town of Elk River, thirty or forty miles away, and advised him to go there. He gave him a horse from the farm and the doctor, equipped only with saddle bags, rode the white horse to the village. A man whose wife was very ill had come to the village to try to get help and saw the doctor as he rode into town. He went home, told his wife what he had seen, suggested that he might be better than nothing, so the wife became Dr. Whittemore's first patient.

Also among his experiences was the time he drove into the country and found a boy very ill. Realizing the only way to save the boy's life was to operate, he used the kitchen table and operated with the father holding a kerosene lamp for light. The boy lived, although there seemed to be little hope for his recovery at the time.

During his years of practice before 1900 there were two medical students who worked with him during their vacations, before receiving their licenses to practice. They were Dr. O. C. Tarbox and Dr. C. C. Carpenter. Dr. Tarbox was with him during the years between 1880 and 1890, and in 1888 went to Princeton, Minnesota, where he practiced for several years, often returning to Elk River to assist him. After 1900 Dr. Tarbox moved to New York where he practiced at Oneonta, N. Y. until his death about 1920. Dr. Carpenter was studying with Dr. Whittemore in 1893 and was in Elk River during his vacations until June 1897 when he received his diploma from the University of Minnesota. At that time he became house physician by competitive examination at St. Barnabas Hospital and later at Asbury. In January, 1898 Dr. Carpenter moved to Bird Island, Minnesota where he practiced for many years.

Soon after 1900 Dr. Whittemore realized that he was suffering from chronic Bright's disease. He fought it valiantly and continued his practice until 1906 when he was forced to give up his work. He died May 31, 1907. He had built up a splendid practice throughout Sherburne and surrounding counties, and left a host of friends to mourn his passing.

Ernest A. Woods is listed in Medical directories in Clear Lake from 1900 through 1910, but no longer in 1912. He was a graduate of the College of Medicine and Surgery of Minnesota in 1899. He was licensed in Minnesota, June 22, 1899 (No. 1075) giving his address as Ashland, Oregon. Several times there is an indication in his listings in Polk's Medical Directories that he was a druggist, but it is not known whether he just owned a drugstore on the side or devoted himself entirely to this branch of medicine.

Pioneer Dentists

There was no resident dentist in Sherburne County prior to 1901. Dr. **R. F. Lynch** came to Elk River from Monticello, Wright County, and Dr. **W. (M?)** *Niven* came from Minneapolis. The latter practiced in Elk River on certain days in the office of Dr. Whittemore. Both Dr. Lynch and Dr. Niven had been licensed by the Dental Examining Board July 11, 1889, when the dental licensing act went into force.

Dr. Niven's territory (outside of his main office in Minneapolis) included Wright County. He was a heavy advertiser in the newspapers, claiming: " . . .

particular attention given to preservation of natural teeth with all fillings now in use. Artificial teeth made and guaranteed to give satisfaction in every case. Teeth extracted without pain by the use of nitrous oxide or ether. Prices reasonable."

Dentists in other Minnesota towns advertised in the Elk River newspapers. There we find the *Woodburn Bros.* of Minneapolis advertising their beautiful teeth in 1880[1)] or "C. H. BATES AND CO., Minneapolis Dental Rooms. Best Teeth, per set $10.00."

Pioneer Druggists

The pioneer drug business in Sherburne County can be found at first only in Elk River and mainly in the hands of medical practitioners. It is difficult, however, to ascertain whether the first real drugstore was operated by physicians or was the one owned by the Lewis Brothers whose advertisements appear in the newspapers as early as 1875. At about the same time a drugstore was operated by *Drs. C. H. Mitchell* and *T. H. Caldwell,* which after a few years became known as the Model Drugstore.

Dr. Caldwell sold his interest in the store to *Dr. John Crawford* in 1875 or shortly afterwards.

Dr. Crawford sold his interest in the drugstore in 1879 to *Burrows W. Kirby* who is considered the first professional pharmacist in Sherburne County. Dr. Mitchell remained a partner until 1880.* In that year the store was located "just opposite the depot, North." Kirby came to Elk River about 1876, but it is not known exactly what he did between his arrival and the time he bought the Model Drugstore. He was also Register of Deeds in Elk River. Born in England April 5, 1850, he came to the United States in 1870. He settled in Minnesota and farmed for six years before going into the drug business.

The best known pioneer druggist of Elk River was *J. Frank Lewis,* who advertised, as mentioned as early as 1875. The ad calls the firm "Dealers in Drugs, Medicines, Paints, Oils, Glass, Putty, also Stationery and Blank Books,etc," which was the usual thing at the time. The store was located at first on State Street. Lewis died in 1896, but his widow, also a registered pharmacist, continued to run the drugstore until after 1900.

In 1878, *Thomas W. Thompson* advertises as "Dealer in Drugs and Medicines, Perfumery and Fancy Articles. Physicians' prescriptions carefully compounded at all times."

As all over the country the advertisement of patent medicines was very heavy, testifying to the fact that the medical services either were not sufficient or the public wanted to try home cures first before consulting a physician. Many of those offered in the late 1870's and early 1880's were favorites for only short periods, but a number of still familiar names: Carters Little Liver Pills, Lawrence and Martin's Tolu Rock and Rye (an appetizer and cough cure), Hostetter's Stomach Bitters, Kidney wort, Allen's Lung Balsam, Lydia Pinkham's Vegetable Compound, "a positive cure for all complaints of the female population," Parson's Purgative Pills, Dr. Mettauers Headache Pills, Day's Kidney Pad, Dr. Clark Johnson's Indian Blood Syrup, St. Jacob's oil, "the great German Remedy for Rheumatism," Kidders Pastilles for asthma, Burnetts Cocoaine, a hair remedy made of cocoanut oil, Tutt's Pills for torpid liver and Tutt's Hair Dye, Ridges Food for Infants and Invalids, Gray's specific Medicine, Tarrant's Seltzer Aperient, Moeller's Cod Liver Oil, Upham's Freckle, Tan and Pimple Banisher, Mexican Mustang Liniment (for man and beast), Grace's Salve, Hunt's Remedy — "the great kidney medicine" — and Fowler's Pile and Humor cure. This selection shows that hardly an ailment was omitted in the competition with the medical profession in pioneer Sherburne County.

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1) Elk River Weekly News, June 3, 1880.

* Ads about the "New Drug Store, B. W. Kirby . . ." are to be found in the Elk River Weekly News from July 29, 1880 through July, 1880. Later on it is called "Kirby's Drug Store."

** The Sherburne County Star, Elk River Daily News and Elk River Weekly News, Sherburne County News — of the middle and late 1870's.

Abstracts and Briefs

SURGICAL REPAIRS OF DELTOID LIGAMENT

Open surgical repairs of the ruptured deltoid ligament should be performed routinely. Investigators have demonstrated that the talus can be shifted only about 2 mm. laterally with all structures about the ankle divided, but with the deltoid ligament intact.

The author classified as complete ruptures of the deltoid ligaments those ankles with 1 cm. or more of clear space between the medial malleolus and the talus with the AP roentgenogram made with the leg in 20° of internal rotation. Such displacement is impossible without associated injuries such as distal fibular ligament or fibular bone injury and anterior capsular tears.

Open repair of the deltoid ligament is imperative only when the talus cannot be shifted to the medial malleolus because of interposed deltoid ligament or a displaced posterior tibial tendon. For non-operative treatment the author prefers the full internal rotation and adduction of the foot in the long leg cast worn from three to five weeks; then a short cast for six to eight weeks. Walking cast is not ordinarily used.

In eighty-three patients treated by closed reduction only 13 percent had any disability and this was mild. Sixty-six percent of the patients were engaging in vigorous sports. Only three patients of the forty-seven examined as treated by closed method had any valgus of the foot. Mild thickening of the deltoid ligament was present in thirty patients. Loss of motion was minimal and only four patients lost more than 10^0 motion in any direction. Follow-up x-rays showed some calcification at the medial malleolus.

In the discussion, the author states that surgical treatment of the deltoid ligament is clearly indicated if closed reduction does not place the talus in its proper position. Those cases treated conservatively indicate that the deltoid ligaments will usually repair and become stable by closed methods alone provided the associated injuries are cared for in the accepted manner. Open surgical treatments of all elements of the fracture dislocation including the deltoid ligament suture, control of the tibiofibular diastasis by a screw and internal fixation of all fractures seems unduly complicated under ordinary circumstances.

In the author's experience, meticulous replacement of the deltoid ligament does not appear to be essential.

In all, 110 patients in a 13-year period were treated and studied; only a small number required open surgery to the medial ankle ligaments:

Kenneth H. Sponsel, M.D.
Minneapolis, Minnesota

Staples, O., Sherwin: Injury to the Medial Ligaments of the Ankle. Journal of Bone and Joint Surgery. Vol. 42-A, Dec., 1960, Pages 1287-1307.

NUTRITION IN GASTRECTOMY

Hays and Clark, from the Department of Surgery, University of Texas Southwestern Medical School, have studied four patients who had total gastrectomy and construction of a substitute stomach from jejunum. Finding that these patients did well clinically, had little if any dumping of esophagitis, ate large meals and had near normal fecal loss of nitrogen and fat with 29 to 33-pound weight gains, they have reported their procedure.

After the stomach has been removed, three loops of jejunum are brought through the transverse mesocolon and, after resection from continuity, sutured side to side with each loop being opened and each lateral edge closed in front, thus building a substitute stomach of the jejunal loops. Vascularity is maintained with a wedge of intact mesentery. Anastomosis is then made to each end, esophagus and duodenum in isoperistaltic position. X-ray barium studies of this pouch show remarkable resemblance to stomach and the nutritional studies would appear to be most encouraging.

The well known, very serious nutritional crippling in many cases of total gastrectomy has, in the view of many surgeons, reduced its value to situations of necessity. Should further similar cases continue to indicate this excellent success in regard to nutrition, the procedure may well represent a major advance.

J. H. Strickler, M.D.
Minneapolis, Minnesota

Hays, R. P., and Clark, D. A.: Nutrition in Patients with Total Gastrectomy and a Jejunal Food Pouch. Annals of Surgery, 152:861, Nov., 1960.

DETERMINATION OF DOMINANT HEMISPHERE

That in a variable percentage of people (up to 10%) the hemisphere which controls the limbs of the side of handedness (according to the individual) is not the one which is "dominant" and controls speech is a vexing fact in neurologic and neurosurgical diagnosis and treatment.

These authors re-evaluate a test which was apparently first used by Wada, in 1949, and in which a barbiturate is injected into one carotid artery. They conclude that the deovelopment of an aphasic disorder and a depressive emotional reaction occurs with the injection on the side of the dominant and an euphoric reaction occurs when the non-dominant side is injected. They note that these conclusions are appropriate only when signs of hemisphere dysfunction are seen in the motor system and in the electro encephalo gram.

R. G. Siekert, M.D.
Rochester, Minnesota

Perria, I., Rosadini, G. and Rossi, G. F.: Determination of Side Cerebral Dominance with Amobrarbital. Arch. Neurology, 4:173. Feb. 1961.

President's Letter

"SOUNDS OF THE SIXTIES"*

I have taken the liberty of using the catchy identifying phrase of one of our major networks as the theme of my remarks. I have modified it slightly by making it plural, as it must be to truly represent the significance of the title: "Sounds of the Sixties." All these sounds were conceived before the sixties, but in this era their volumes have now reached the thresholds of hearing of all who stop to listen, and even of those, also, who choose not to listen. To the latter, they are as disturbing as static is to music.

What are some of these sounds that have now reached the intensity to break through the sound barriers of our medical philosophy, and what are the basic causes for this noisy up-surge?

Frankly, we are partly to blame. Due to medicine's great triumphs over disease, and its continuing progress in research, coupled with medicine's unselfish desire to share its successes with all, the average American has come to expect good medical care as a basic right. He ranks it with the other basic necessities of food, shelter, and clothing.

Unfortunately, some confuse these rights with gifts. They think they are synonymous.

Others will begrudgingly acknowledge a purchase price attached to this commodity, but somehow feel a stronger financial obligation to other commodities first. They accordingly have a feeling that medical care is always unjustly bought with sweat and tears.

There are others who thrive on, and promote this philosophy, so that the sounds that arise would almost indicate to the willing ear that many of us are ill-housed, ill-clothed, ill-fed, and ill-cared.

It does not take any thorough research to hear these sounds of the sixties. A casual daily perusal of our lay newspapers, magazines, trade journals, and other printed material that meets the eye, to say only in passing, the many words that reach the ear through the various mediae, brings to light both the harmonious and the discordant notes that make up their volumes. I should like to call your attention to a few. They should bring to your minds, not only a defense, but a desire on your part to place before the people, medicine's true picture. Justified or not, they emphasize medicine's paradoxical position.

Let me start by quoting two sentences from the same article, and on the same page; "American medicine is the best in the world"; "Millions of people are bitterly dissatisfied with the medical care they are getting."

We must find a way to retain and improve our personal touch. We must not make the practice of medicine just the administration of our wonder drugs and forget the oft-maligned bed-side manner. Pride in our accomplishments should not be substituted for our honest personal concern for our patients. Justified or not, one hears in this criticism that there is a lack of consideration when we do not take time to sit down and listen sympathetically to our patients. This criticism ranks high in the list of complaints and equals the irritation of the so-called high cost of medical care.

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*This is the text of Dr. Oppegaard's presidential address to the House of Delegates at the 108th meeting of the Minnesota State Medical Association, May 20, 1961.

There must be reasons why doctors have come to occupy the spot-light, where in past years we were relegated to the wings. Two fundamental reasons come to mind quickly. Since the defeat of the Murray-Wagner-Dingell bill in the depression years of the 1930's, the socialistic-minded have continually bombarded the free enterprise system with their philosophy. They found out early that appealing to the health and welfare of the people was an approach that the free enterprise system did not recognize as their Achilles heel. Shaded statements of lack of medical care for the ill-housed, ill-clothed, and ill-fed were made to encompass the whole public in the minds of the uninformed.

Another basic reason was the steady inflationary rise in our national economy in the past 30 years. To the surprise of many, this has also affected medical care. I feel that we have missed an important point in not pointing out that inflation also affects the cost of medical care. It is true that health bills are higher today, but percentage-wise, the doctors' fees have not risen as much as many other commodities.

We must inform the public that they are paying about the same share of their pay-checks for health care as they did 20 years ago. In addition, their health dollar is buying more and better health care services.

I should like to continue with further quotes. As you hear them, you can refute them as well as I. They need not be answered here. They should be answered in the public square. The public will recognize honest refutations or, if necessary, honest remedial measures. In any event our platform should be a vigorous explanation of medicine to the public. Here are a few further quotes from a fairly long list that have come to my attention. Let me say that I have deliberately left out quotes by politicians.

"In the fields of medicine and science, the A.M.A. is progressive, intelligent, and well-informed. In the field of politics and social action, it is reactionary, bull-headed, and uninformed. There isn't an organization in the United States that exercises more dictatorial control over its membership than the A.M.A."

"Ignorance is the most charitable explanation of the lag between events and organized medicine's political stance. A less benign interpretation might atribute it to the determination of a profession, corroded by the ideology of business, to hang onto lucrative privileges."

"The doctor may be a learned man in his own field. But in general knowledge he is the worst educated of our professional men."

"We are accused of having formed a tight guild that blocks the development of new medical schools, deters the recruitment of young physicians; favors sterile specialism; and contests every advance that might offer better care to the medically indigent groups, all in restrictive protection of our vested financial interests."

"The control by big government is tightening with alarming rapidity. In order to hasten the process, the people are being trained to think that the doctor is a scoundrel, preying on the ill, callously ignoring calls for aid, bent on enriching himself at the expense of the needy, more concerned with his golf game than with humanity, and that he is an obstructor of social progress."

With this bombardment coming from factions of our society, the doctor realizes that his method of practice is changing. He must be able to identify those forces which advance his profession from those who wish to guide it, if not indeed, control it. All of us have concentrated most of our attention on what we have considered one of the main forces in this change, namely the Government. However, we must not lose sight of some of the others.

In this list can be mentioned the influence of the hospitals. This has come about almost un-noticed, dictated as it is, by the changing pattern of disease: from home to office to hospital practice.

The increase in insurance coverage with its use and abuse has contributed to this change.

In most instances, however, patients do receive better care since most hospitals are more fully equipped than are the doctors' offices. It is obvious, however, that hospitals need physicians as well as physicians need hospitals. Let us emphasize that point.

However, the danger of this growing use of hospitals will foster a growing control over the physician. May I cite the near captivity of the radiologists, the pathologists, and anaesthesiologists. If free-wheeling hospital administrations, coupled with increased Federal participation, are allowed to develop, we will soon have a similar situation that exists in Britain, where the entire specialist service for 50,000,000 people is an adjunct of the hospital. We must and can convince another force, the labor unions, "that private medical care is better than panel medical care, and that a personal physician" can out-perform a non-personal production line year in and year out.

Another force is the reaction of the public. The layman's image, true or false, controls his behavior towards us. We must disprove the image portrayed in the "Sounds of the Sixties." We must also make an honest appraisal of ourselves. We must see to it that the deeds of a few physicians, either by their actions or their charges, are not unwittingly aiding our opponents. I wonder if we haven't been so busy forestalling the thrust of socialized medicine, that we have over-looked the many other sources and avenues which can lead to socialization.

Let me finish with a quote from an article in Northwest Medicine: "Defense must be from a strong position, by a unified group under capable leadership. This means eradication of weak spots, such as excessive charges and neglect of responsibilities; development of uniformity of opinion; and vigorous explanation of medicine to the public. The weak spots are few. They have been magnified out of all proportion by those who wish to destroy the private practice of medicine."

And may I add, Let's change the "Sounds of the Sixties."

C. L. Oppegaard

President, Minnesota State Medical Association

Editorials

MEDICO-LEGAL INTERPROFESSIONAL RELATIONSHIP

A code of ethics, professional behavior, and definition of responsibilities of the physician involved in medico-legal aspects of his practice has been delineated by the State Bar and Medical associations.

Neither the fact nor the appearance of incompetence, corruption, dishonesty or unethical conduct on the part of an individual member of either profession can be tolerated. It therefore follows that each profession must vigorously support within its own ranks, as well as within the ranks of the other, those ethical concepts which each has found necessary in the public good.

Professional Obligation of Physician to Patient In Regard to Litigation

The *attending physician* has a duty to assist his patient with respect to any litigation involving the conditions which he has treated. This duty arises from his general obligation to assist in the administration of justice and his specific responsibility for the welfare of his patient. It is for the physician to determine the actuality or probability of facts pertaining to his patient's condition. It is for the lawyer to determine when, how or under what circumstances such facts are most appropriately to be presented.

Medical Conduct Before Trial

Information obtained by the attending physician in the course of his examination and treatment of a patient are legally privileged except in situations involving the Workmen's Compensation Act, when an attending physician is designated by the Commission or when a physician's services are paid for by the employer. The information obtained by an *examining physician* (one engaged for the purpose of litigation) and any written report thereof are not privileged. Nevertheless, an examining physician should not reveal such information or the contents of such report to any one other than the person employing him without first obtaining the written consent of such a person.

Neither the attending physician nor the examining physician should express any opinion to the patient as to the settlement value of any claim for personal injury.

The examining physician, acting for a party adverse to the person he is examining, should where taking a medical history, attempt to elicit only such facts as are pertinent to his examination and should not solicit the findings or the opinion of, or consult with, the attending physician, nor should he suggest to the person being examined any treatment, or comment to such a person on any treatment already received or divulge to such person any of his medical findings or opinions.

It is not desirable for a lawyer to be present when his client is being examined by an examining physician, whether the physician is employed on behalf of his client or on behalf of an adverse party, but there is no reason why the lawyer should not discuss with such physician, either before or after examination, any aspect of the examination that may be pertinent.

Legal Conduct Before Trial

A frank discussion of the issues and opinions, between the physician on the one hand and the lawyer on the other hand prior to trial, is to be encouraged; the lawyer properly pointing out the legal foundation for medical evidence. This does

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From recently distributed Code for Interprofessional Relations as Established by Minnesota State Bar Association and Minnesota State Medical Association.

not, however, mean the physician's testimony must be in accord with these views. Both the lawyer and the physician must share the responsibility for improperly presented or fraudulent medical testimony.

Medical Reports

The attending physician should always stand ready to furnish written reports to lawyers, but lawyers should not expect the attending physician to furnish the report until the physician has first received written authorization from the patient. A request for a written report should ask for history, diagnosis, treatment, prognosis and medical fee up to date of report. If a physician is unable to state a complete medical evaluation and prognosis at the time of his examination, he should so notify the lawyer and suggest that a further medical report at a later time is indicated.

The Interprofessional Conference

Personal conferences between the lawyer and each physician, whether he be attending or examining physician, are always proper and generally should be regarded as professionally obligatory. At this conference the lawyer should explain the legal aspects of the case and the facts he expects to develop, and fully and with complete candor, the physician should explain the medical aspects of the case. If a hypothetical question is to be asked, the lawyer should clearly outline it at the conference. The physician should review all his notes, records and X-rays with the attorney. Before the conference concludes, the physician should volunteer any pertinent medical facts not previously discussed.

Subpoenas to Secure Medical Testimony

The lawyer should make every effort to arrange his client's medical evidence without the use of subpoena, but when it cannot be obtained by arrangement, the lawyer may subpoena the physician. A physician should bring to court all his records, with respect to the patient but he is not required to do so unless he has been served with a subpoena duces tecum (original records). If the physician appearing in answer to subpoena is examined on a subject upon which he is an expert, the judge may at the conclusion of his testimony allow him a reasonable expert witness fee.

The Medical Witness At Trial

The proper, fair and impartial presentation of medical testimony is the joint responsibility of the physician, acting as a medical witness, and both examining lawyers. Our system of justice assumes that medical witnesses, as well as other witnesses, are impartial as to the facts within their knowledge. They are not and should not be advocates. A lawyer should not engage in the abuse of any witness, including a physician. However, vigorous cross examination to expose weaknesses may be expected and the physician should not be upset or assume an antagonistic attitude toward such cross examination providing the examining lawyer conducts it in a professional and gentlemanly manner.

Medical Testimony

A physician should bring with him to court all his records with respect to the patient about whom he is testifying and may request that the hospital records with respect to such patient also be present in court. A lawyer should not counsel against the production of such records.

In giving testimony, the physician under no circumstances should permit any bias, prejudice, favoritism or personal interest to influence or affect his testimony. If the physician is asked a question to which he does not know the answer, he should so state and make no attempt to speculate, guess or theorize or give answers not responsive to the question propounded. A physician should not hesitate to express his opinions, which are based upon a reasonable medical certainty, and therefore is not required to exclude all doubts from his mind, but may render his testimony as opinion couched in expressions which fall short of an absolute conviction of accuracy. If the physician has no opinion, he cannot be compelled to give one. The physician should not feel frustrated by frequent interruptions by objections from lawyers since they are important and essential to protect the relative rights of the clients who are litigants.

In the presentation of hypothetical questions, it is the lawyer's obligation to present such questions so as to be free from ambiguities and to eliminate any possible misunderstanding. The medical witness must be sure that he understands all of its elements and that they are sufficient and complete enough so that he can properly predicate his opinions thereon.

Ethical Limits of Medical Testimony

In the rare occasions of intentionally false or improper medical testimony, or when lawyers exceed the limits of propriety by attempting to introduce improper medical testimony or to influence the testimony of a medical witness, it is the obligation of the members of both professions to report such activity to the appropriate organization within the profession which is set up to handle such matters.

Compensation of Medical Expert

It is improper for the lawyer and physician, whether he be attending or examining physician, to enter into any arrangement making the payment of medical fees or the amount thereof contingent upon the outcome of the litigation. Fixed fees should be established prior to the examination or court appearance. The expense of care and treatment of a patient is the obligation of the patient irrespective of the litigation or outcome thereof. Similarly, the expense for preparation of medical reports for use by the patient's lawyer is the obligation of the patient and therefore, the expense of court appearance is the obligation of the patient, the lawyer being under no legal obligation to pay such fees. It is improper for the attending physician to insist, as a condition precedent to his testimony, that the lawyer for the patient guarantee payment for an unpaid bill for medical services, or for bills for services to be incurred for the court appearance.

The expense of an examination and report by an examining physician are obligations in the first instance of the lawyer requesting the same. This fact does not relieve the client of his ultimate liability to pay the examining physician or reimburse his lawyer.

Court Appearances

The physician's fee for court appearance is based upon many factors among which are not only actual time away from office but also stand-by time, and the physician is furthermore entitled to charge a fee for a court appearance if a case is settled while he is in the courtroom or if he has incurred stand-by time even though in either case he has not testified.

Harold W. Brunn, Executive Secretary
Minnesota State Medical Association

MILK DRINKER'S SYNDROME (Burnett's Syndrome)

During excessive milk alkali therapy for peptic ulcer, hypercalcemia, alkalosis and transient renal insufficiency with azotemia may develop to cause this syndrome. The excessive use of milk, cream and calcium carbonate may in some individuals cause symptoms of headaches, nausea, vomiting, anorexia, dizziness, irritability, mental confusion, depression, ataxia, stupor and toxic psychosis in progressive order. Serum phosphorus and alkaline phosphatase levels are normal and absence of skeletal demineralization aid in differentiating this from primary hyperparathyroidism.

Robert H. Durham

* * *

They say best men are molded out of faults. And, for the most, become much better for being a little bad.—*Shakespeare*

He—got the better of himself, and that's the best kind of victory one can wish for.—*Cervantes*

Letters To the Editor

Your opinions are sought as "Letters to the Editor." Any signed letter will be considered if it is beneficial to the medical practice as a whole. The opinions expressed in this section do not necessarily represent the opinions or policies of MINNESOTA MEDICINE or the Minnesota State Medical Association.

Dear Editor:

In Medical Economics a Maine physician made a strong plea for charging patients for telephone calls.

I am a practicing Dermatologist and I wish to apologize for the smug commercialism shown by this Maine doctor. This doctor has views which are no credit to my State nor to the doctors of America. When I was not yet a physician, I lived in Edgerton, Minnesota. Every Minnesota doctor I knew in those years was the kind that I someday hoped to be. Among those I knew were Charles and William Mayo, Donald Balfour and E. Starr Judd— the big four of the Mayo Clinic some forty and more years ago.

All patients should have a green light to their doctor and no charge or other roadblocks should be set up to keep the mothers or anxious patients from telephoning him.

We who have practiced medicine for a long time want to see the profession, we highly revere and love, put back in a class with the clergy, where those who went before us, placed it. If we do not do this we lose far more than we gain.

The doctors of the past were on a pedestal in the public's opinion because they deserved to be there. They lived to serve. They observed strictly the Oath of Hippocrates and the Code of Medical Ethics which was inexcusably revised by some of our representatives. Today the conduct of a few people in *all* walks of life, including a few doctors, badly needs revision.

The public did not get billed for telephone calls or cancelled appointments; nor were they sent to free clinics by the truly great physicians of the past. They, like the preachers, priests, and many teachers went about doing good throughout their lives without regard for the financial return. The great physicians of the past were not unhappy men and they were truly successful. They believed that it is a privilege to be a physician. They went about daily serving their fellow man, giving of themselves gladly and generously, showing a heart as well as a well-trained medical mind.

Adrian H. Scolten, M. D.
32 Deering Street
Portland, Maine

"WHAT IS YOUR DIAGNOSIS?"

Here's the Answer!

From Page 231

Infarct of the left fallopian tube.

Medical Economics

Edited by the
Committee on Medical Economics
Minnesota State Medical Association
GEORGE EARL, M. D., Chairman

SOCIALIZED MEDICINE LEGISLATION

(Continued from May)

Single Trust Fund

This bill would also revise the law dealing with the trust funds so as to combine the Old Age and Survivors Insurance Trust Fund and the Disability Insurance Trust Fund into a single trust fund called the Federal Social Insurance Trust Fund. The new Trust Fund would be composed of three accounts known as the Old Age and Survivors Insurance Account, the Disability Insurance Account and the Health Insurance Account. Funds existing in the present trust funds would be transferred to the appropriate Account.

Beginning July 1, 1962, the Health Insurance Account would be composed of the following amounts: .1% of wages subject to social security taxes paid in 1962, .6% of wages after January 1, 1963, .075% of self-employment income subject to social security taxes during 1962, and .45% of such income subject to taxes after January 1, 1963, plus such proportionate share of appropriations from the general revenue funds as are necessary to meet the additional cost resulting from provisions in the law which authorize benefits for veterans, for the survivors of World War II veterans who were deemed to be fully insured at the time of their death, and for lump sum death payments for such individuals.

The provisions of existing law relating to the Board of Trustees, their duties, and the investment of the Trust Fund would be essentially the same as under existing law, except that there would be an appointment of the earnings of the Trust Fund to the appropriate Account semiannually.

Railroad Retirement Act

The Railroad Retirement Act would be amended so as to apply the appropriate provisions of the new Title XVI of the Social Security Act so that Railroad Retirement beneficiaries 65 or over would be eligible for the health benefits.

Agreements entered into by the Secretary of HEW would be entered into in behalf of both the Secretary and the Railroad Retirement Board. However, the Railroad Retirement Board could also enter into agreements for service provided in Canada or in any facility devoted primarily to railroad employees. The Railroad Retirement Board would operate the program for railroad retirement beneficiaries.

An individual entitled to benefits under the Railroad Retirement and Social Security Acts could not have payment made for the same services from both the Railroad and the Federal Social Insurance Trust Funds, nor could an individual receive more than the maximum services authorized under either program.

The Secretary and the Railroad Retirement Board would be required to jointly establish procedures designed to minimize duplications of requests for payments for services and to establish procedures for determining from which trust fund payment would be made.

Railroad Retirement Tax Schedule

To meet the cost of this program, the tax rate on the present wage base of $4,800 would be increased at the following rates:

	Employee Representatives		8¾%	9 %
	Present	Proposed	Employer-Employee (each)	
1961	13½%	13½%	Present	Proposed
1962	14½%	14½%	6¾%	6¾%
1963-64	14½%	15 %	7¼%	7¼%
1965	15½%	16 %	7¼%	7½%
1966-68	16½%	17 %	7¾%	8 %
1969 &			8¼%	8½%
Thereafter	17½%	18 %		

Note: The present and proposed increases in these tax rates will be effective only if the social security tax increases become effective.

The Administration estimates that the cost of the program in the early years would be slightly more than $1 billion. It also estimates that in 1963, 14.24 million of the 16.75 million aged will receive benefits under the program. Author-King (D) Calif.; Introduced February 13, 1961; House Ways and Means Committee.

Reasons for Opposition To Social Security Approach

When considering the use of the Social Security mechanism as found in Title II of the law to provide medical care for the aged, it is necessary to give thought not only to the immediate problem but to the future effect and need for such legislation. The purpose of this report is to synopsize some of the general objections to this approach and specific objections to bills introduced in the Congress.

1. The major fallacy of providing medical care for the aged under Title II of the Social Security Act is that it is based on the erroneous assumption that a majority of the aged are in need of this type of care and are financially unable to meet the cost. This attitude is indicated by the wide publication of a statement that in 1957 ". . . three-fifths of the people 65 and over had less than $1,000 in money income . . ." which was contained in a report to the Committee on Ways and Means by the Secretary of Health, Education and Welfare (Hospitalization Insurance for OASDI Beneficiaries, April 3, 1959).

In effect, this statement means that 9 million of our 15 million people over 65 have incomes of less than $1,000. Yet, there are only 2.5 million people on the public assistance rolls! It should be obvious, therefore, that in arriving at this conclusion nonworking wives and other dependents are included in the computation. Suppose a statistical sample were taken of 100 executives who earn $30,000 a year and their wives. Further, suppose that the wives have no private income of their own. The results of such a sample would be that one half of those sampled had incomes of $1,000 a year or less.

The same report points out that the median total income of retired Social Security beneficiaries is $183 per month. It also points out that the average retired couple had a median net worth of $9,620 and that 75% of OASDI beneficiary couples own their own home with a median equity of $8,360 (87% of these homes are mortgage free).

In the future the economic status of the aged is expected to be even better—partially because of increases in Social Security cash benefits and partly because of situations described below.

Much also has been made of the fact that the average Social Security payment is approximately $73 per month. This figure does not include such other sources of income as:

(a) 1.5 million people now receive cash benefits from corporate pension plans. In the future 19 million people now covered by such plans will also receive these benefits. The number covered by corporate pension plans is growing at a rate of about 1 million per year, according to a statement by David A. Linsay, Assistant to the Secretary of the Treasury, before the Senate Finance Committee on H.R. 10 in June, 1959.

(b) 1 million retired persons currently receive annuities which were privately purchased. Here again, the number is expected to be larger in the future.

(c) 1 million persons over 65 receive veterans' pensions and are also eligible to receive Social Security benefits. This number will increase rapidly in future years because of the aging of the veteran population.

(d) 4 million individuals over 65 are employed, some of whom are receiving Social Security benefits and income relatively the same as the average of other workers.

On its face, the assumption that all 15 million of our aged are ill and in need of medical care is patently false.

2. The so-called Social Security approach for medical care for the aged will not provide, in most instances, care where the care is needed; namely among the indigent and the near-indigent. Of the 2½ million persons receiving Old Age Assistance, only 600,000 would receive medical benefits under the Social Security approach and in some cases not as extensive medical care benefits as they currently receive.

3. The Social Security approach will become more expensive as the number of the aged increases even though the proportion of needy aged will be decreasing. It is estimated that there will be 20 million people over 65 in 1970, 90% of whom will be covered by Social Security. The percentage of individuals over 65 receiving Old Age Assistance, which was 22% in 1950, dropped to 15% in 1959. By 1970, it is expected that this percentage will be 11%.

4. The Social Security approach is unnecessary. In January 1960, 49% of those over 65, or approximately 7.7 million persons, had some form of health insurance.

The insurance industry estimates that by 1970 90% of the aged wanting coverage will have it. Until that time, those who are in need and who cannot afford private health insurance can receive care under the Public Assistance programs such as the Old Age Assistance and Medical Assistance for the Aged programs contained in Title VI of Public Law 86-778, through veterans' medical care programs, or medical care programs for retired military personnel and their dependents.

5. The Social Security approach is unfair in that it places the burden of meeting the cost of the program only on low-income workers and then on gross income up to $5,000. Senator Kerr has estimated that 40% of taxable income in the United States is not subject to Social Security tax. If medical care for the aged is a national problem, it should be financed from general revenues as provided in Title VI of Public Law 86-778.

6. The Social Security approach to medical care for the aged would lead to overcrowding of existing facilities. A 1957 report by the Blue Cross Commission indicated that utilization of hospitals by Americans over 65 under Blue Cross plans was 2.5-3 days per year. On the other hand, in Saskatchewan, Canada, which has "free" medical care, utilization by the same age group averages more than twice as much, or 7 days per year. The reason ascribed is that the Saskatchewan plan is oriented to institutional care. Consideration should also be given to the fact that it is "free." All the Social Security proposals also are oriented towards institutional care and would be "free" to aged beneficiaries.

7. The Social Security approach would eliminate the states' historical responsibility. Some states may be willing to escape this responsibility by putting it in the hands of the Federal Government.

8. The Social Security approach would seriously affect the insurance industry by eliminating 7.7 million aged customers.

1. While the Social Security approach as envisaged by a number of bills introduced in the 87th Congress would provide partial health care for certain Social Security beneficiaries, it would not finance care for the aged who need it.

On the other hand, the Kerr-Mills bill (Title VI—Public Law 86-778) authorizes payment for care for the indigent under Old Age Assistance and for those individuals who, while able to provide for day to day living expenses, may not be able to meet the cost of health care without jeopardizing their economic status. Individuals who are receiving Social Security retirement benefits could receive benefits under the Kerr-Mills bill.

2. The health care benefits provided in bills introduced in the 87th Congress are not adequate to meet standards of good medicine. Benefits range from only 60 days of hospitalization; to 90 days of hospitalization, nursing home care, diagnostic outpatient services and various expensive drugs; to 120 days hospitalization subject to a $90 deductible and other services which are limited by the use of "units of service." Most of the pending bills do not provide for the financing of physicians services.

On the other hand the Kerr-Mills bill authorizes financing of complete medical care without limitation.

3. The Social Security approach would call for new federal administrative machinery through which agreements to provide services would have to be made with 6,000 hospitals, 54,000 drug stores, 25,000 nursing homes, and, if physicians' services were included, 208,000 practicing physicians.

The Kerr-Mills bill, on the other hand, utilizes the already existing state public assistance mechanisms.

4. The taxes imposed by bills using the Social Security approach would not be adequate to meet the cost of the program. The tax rate increase imposed by these bills would be expected to bring in $1 billion annually. According to the report of the Secretary of HEW to the Ways and Means Committee, the Health Insurance Association of America in 1958 estimated that a program of 60 days of hospitalization alone for retired beneficiaries would cost in 1959 $1,320,000,000. Nursing home benefits would cost $514 million. The inadequacy of the tax rate increase will be emphasized as the number of Social Security beneficiaries increases.

In an effort to protect the Social Security trust fund, certain of the bills and amendments recommended the establishment of a special trust fund for medical care under Social Security. If, as indicated above, tax receipts to support this program are inadequate, what will happen to the health benefits program? Would it be discontinued after five months of operation? Would benefits be reduced or would the trust fund or the general treasury be opened up to meet the additional future costs?

The Art of Medicine

PR

Carl H. Woyke
Editor

WINNING WAYS WITH PATIENTS Your office girl can be your most valuable Public Relations asset. An office girl who is aware of the importance of good doctor-patient relationships can win more friends for her doctor-employer as well as herself and the medical profession as a whole.

Your office girl is your ambassador. The impression which she makes on your patients as your representative can strongly influence their opinions of you.

When hiring a new office receptionist, secretary, or medical assistant do you make certain that she has a personality to suit the job? Here's a quick personality check list for screening a new employee:

1. Does she like people?
2. Does she enjoy helping people?
3. Is she cheerful?
4. Is she friendly?
5. Is she polite?
6. Does she try to be tactful in every situation?
7. Will she be kind and sympathetic to all your patients? How is her personal appearance? Does she follow these rules?

1. Abide by the old standby health rules; get plenty of sleep, exercise and eat balanced meals?
2. Follow the rules of personal cleanliness?
3. Wear comfortable shoes while working?
4. Wear make-up that is most becoming and in good taste?
5. Shampoo her hair regularly and set it neatly and attractively?
6. Omit vivid nail polish during office hours?

Correct telephone manners are important for all employees, present and future. Does your office girl:

1. Speak in a low pleasant voice?
2. Speak slowly and distinctly?
3. Speak with authority but does not sound brisk?
4. Speak in a normal tone of voice, not shout or mumble?
5. Speak directly into the transmitter?
6. Convey the impression that she is anxious to be of service?
7. Hang up gently?
8. If she must leave the phone to get information, suggest that she will call the other party back later?

Good business practices: Your office girl, present and future should have a practical knowledge of good business methods, she should:

1. At the time of the patient's first visit, she should work out a satisfactory payment plan.
2. Avoid irregular billings.
3. Itemize bills to avoid misunderstandings.
4. Be thoroughly familiar with voluntary health insurance contracts.
5. Know how to write a good letter. Avoid the temptation to write threatening letters.

These suggestions are among those included in an American Medical Association handbook, "Winning Ways With Patients" written for doctors' receptionists, secretaries and medical assistants.

Your office copy of "Winning Ways With Patients" is available from this office without charge.

NEW FILM SHOWS REWARDS OF RETIREMENT "Old Man Young" is the title of a recently released motion picture presented by the American Medical Association in cooperation with Merck, Sharp and Dohme. The 28 minute sound color film is especially recommended for use by community audiences.

The film which is a study of the opportunities and rewards of retirement is the portrait of Charley Young, recently retired, finished with all the odd jobs he has always wanted time to do, and about to go "on the bench." Just before he resigns himself to finishing out his life in idleness, he is given an opportunity to see some other senior citizens who—although "retired"—are happy, active, and productive: a businessman, a doctor, a Navy officer, and others, including a group of baseball players who must have lived three-quarters of a century before they are eligible to play in their league.

Charley learns that no one needs to stop living if it is necessary for him to retire. Most people today are active, healthy, and alert at 65. They have a wealth of experience and ability that should not be wasted. Charley finds his own answer to this problem and is able to share his insight with a friend.

For showing dates, contact your State Association Office.

TO ALL MY PATIENTS The American Medical Association has announced the availability of a new office plaque which reads as follows:

> To All My Patients . . . I invite you to discuss frankly with me any questions regarding my services or my fees. The best medical service is based on a friendly, mutual understanding between doctor and patient.

As you know, a physician's best public relations is carried on right in his own office. Here the physician gets acquainted with his patients . . . gives them a chance to talk over problems . . . builds a feeling of mutual understanding between patient and doctor.

Your American Medical Association has designed this attractive new office plaque to be displayed prominently on an office desk or wall. This is a graphic invitation to patients to talk over professional services and fees. Patients like to ask questions but often hesitate to do so. It will open the door to better relations with your patients. The plaque is of attractive laminated finish in dark brown lettering on buff, and will harmonize with any office decor. It measures 11½ x 7¾ inches.

The price is $1.00 and payable in advance and may be ordered from your State Association Office. Order one today.

Minnesota Blue Shield

One out of every four Americans is enrolled in a Blue Shield program, according to the National Association of Blue Shield plans. Total enrollment in the U. S. and Canada was 47,084,988 at the end of 1960.

Approximately the same ratio exists in Minnesota, where about 25 percent of the population is covered by Blue Shield.

While Minnesota ranks 18th in population, it has the fourteenth highest Blue Shield enrollment in the country.

The national association reported that there had been a net gain of new members in 1960 of 2,292,065, throughout the country, including membership in two new plans, reported for the first time: Surgical Service, Inc., Albuquerque, New Mexico, and Physicians Service, Providence, Rhode Island. The continued expansion of Blue Shield by the organization of new plans is further proof of the vitality of the Blue Shield concept, first developed more than twenty years ago.

The 1960 national membership figures also included federal workers who selected Blue Shield as their medical care plan under the Federal Employee Health Benefit Program.

When offered the choice of various medical care programs, more than half of all federal employees chose Blue Shield. More than 26,000 federal employees and their dependents are enrolled in the Minnesota Blue Shield plan.

The Federal government, as the employer, shares in the cost of this group coverage.

The acceptance of Blue Shield by Federal employees is especially significant, since this was the largest single group of persons ever to be presented with a choice of medical care plans and asked to select the one they preferred.

* * * *

The utilization of Blue Shield in Minnesota is an impressive measure of its contribution to the medical-economy of this state.

Since its founding in 1947, Minnesota Blue Shield has provided over $70,096,676 in benefits to its subscribers.

During 1960, an average of 1,835 services were paid for by Minnesota Blue Shield during every working day, with claims totaling an average of $38,073 per day.

During an average working day Blue Shield pays 253 claims for in-hospital medical services, 72 for obstetrical services, 589 for surgical procedures, and 921 benefits for diagnostic and other services.

* * * *

With a record number of Americans now carrying some form of medical care insurance protection, the principle of voluntary prepayment plans is well established. However, the principle is one which can be quickly undermined and overturned by the growing clamor for more and more government intervention in this field. That is why the Blue Shield cause, despite its high number of subscribers, can never rest, can never be taken for granted.

Minnesota Blue Shield, with its expanding services and benefits, has always striven to anticipate and meet the medical-care needs of the citizens of this state. One of the most liberal of the Blue Shield plans has been developed in this state, and it is a plan of which the medical profession can indeed be proud.

The outstanding Senior Citizen plan is only the latest of the Blue Shield innovations in this state, and with enrollment in this plan now open on a continuing basis, doctors are strongly urged to point out to their elderly patients the value to them of this program.

Doctors should, of course, always seek to expand non-group, and where possible, group coverage, as well, thus helping to spread the Blue Shield idea throughout their whole communities. Strong community-wide membership in Blue Shield will always be the strongest bastion against the government-interventionists who continue to press for the use of public funds to pay the public's health needs.

Prepared as a monthly message to participating physicians by Minnesota Blue Shield.

ALL PHYSICIANS
ARE WELCOME

Recognizing that the exchange of ideas is fundamental to medical progress, Lederle continues its Symposium program with the 10th year of scheduled meetings. Through these Symposia, sponsored by medical organizations with our cooperation, over 50,000 physicians have had the opportunity to hear and question authorities on important advances in clinical medicine and surgery. You have a standing invitation to attend any of these Symposia with your wife, for whom a special program is planned.

ANOTHER YEAR OF SYMPOSIA . . .

RICHARDSON SPRINGS, CALIFORNIA
Sunday, June 11, 1961
Richardson's Mineral Springs

SPRINGFIELD, MASSACHUSETTS
Wednesday, June 14, 1961
The Schine Inn

CHEYENNE, WYOMING
Monday, July 24, 1961
The Plains Hotel

McALESTER, OKLAHOMA
Saturday, July 29, 1961
The Aldridge Hotel

SEATTLE, WASHINGTON
Saturday, August 5, 1961
The Olympic Hotel

KANSAS CITY, KANSAS
Friday, September 15, 1961
Battenfeld Memorial Auditorium

TOLEDO, OHIO
Thursday, September 28, 1961
The Commodore Perry Hotel

WICHITA, KANSAS
Wednesday, October 4, 1961
The Broadview Hotel

TRAVERSE CITY, MICHIGAN
Friday, October 13, 1961
The Park Place Hotel

PEORIA, ILLINOIS
Thursday, October 26, 1961
The Hotel Pere Marquette

PROVIDENCE, RHODE ISLAND
Wednesday, November 1, 1961
The Colony Motor Hotel

HARRISBURG, PENNSYLVANIA
Thursday, November 9, 1961
The Penn Harris Hotel

JACKSONVILLE, FLORIDA
Sunday, November 12, 1961
The Robert Meyer Hotel

ALLENTOWN, PENNSYLVANIA
Wednesday, November 15, 1961
The Americas Hotel

Lederle LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, N. Y.

Meetings and Announcements

JUNE

American Medical Association, Annual Meeting, New York City, June 25-30. Dr. F. J. L. Blasingame, 535 N. Dearborn, Chicago 10, Executive Vice-President.

Society for Vascular Surgery, Biltmore Hotel, New York City, June 25. Dr. George H. Yeager, 314 Medical Arts Building, Baltimore 1, Secretary.

American College of Physicians, Medical Amphitheatre, University Hospitals, June 19-23. Write Edward C. Rosenow, Jr., M. D., Executive Director, 4200 Pine Street, Philadelphia 4.

The Law-Science Academy of America, Crested Butte, Colorado, June 12 - August 11. Write: Hubert Winston Smith, M. D., Director, The Law-Science Institute, Chancellor, The Law-Science Academy, Townes Hall, University of Texas Law School, 2500 Red River, Austin 5, Texas.

American College of Chest Physicians, Hotel Commodore, New York City, June 22-26. Write: Mr. Murray Kornfield, 112 E. Chestnut St., Chicago, Executive Director.

JULY

American College of Chest Physicians, Brown Palace Hotel, Denver, Colorado, July 24-28. Write: Mr. Murray Kornfield, 112 E. Chestnut St., Chicago, Executive Director.

SEPTEMBER

American College of Chest Physicians, Warwick Hotel, Philadelphia, September 25-29. Write: Mr. Murray Kornfield, 112 E. Chestnut Street, Chicago, Executive Director.

American Association of Medical Clinics, Barbizon Plaza Hotel, New York, September 27-29. Dr. Joseph B. Davis, Davis Clinic, 131 N. Washington St., Marion, Ind., Secretary-Treasurer.

Kentucky State Medical Association, Brown Hotel, Louisville, September 19-21. Mr. J. P. Sanford, 1169 Eastern Parkway, Louisville 17, Ky., Executive-Secretary.

Michigan State Medical Society, Grand Rapids, Pantlind Hotel, September 24-29. Dr. D. Bruce Wiley, 606 Townsend St., Lansing 15, Mich., Secretary-Treasurer.

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American Society of Clinic Pathologists, Olympic Hotel, Seattle, September 30 - October 8. Miss Eleanor F. Larson, 445 N. Lake Shore Drive, Chicago, Manager.

The Minnesota Academy of General Practice announces its Eleventh Annual Fall Refresher to be held at Hotel Radison, Minneapolis, September 27-28.

OCTOBER

American Academy of Pediatrics, Palmer House, Chicago, October 2-5. Dr. E. H. Christopherson, 1801 Hinman Ave., Evanston, Ill., Executive Director.

American College of Chest Physicians, Sheraton Towers, Chicago, October 23-27. Write: Mr. Murray Kornfield, 112 E. Chestnut St., Chicago, Executive Director.

American Cancer Society, Biltmore Hotel, New York City, New York, October 23-24. Write: Professional Education Section, American Cancer Society, 521 West 57 Street, New York 19, New York.

NOVEMBER

American Medical Association, Clinical Meeting, Denver, November 27-30. Dr. F. J. L. Blasingame, 535 N. Dearborn St., Chicago 10, Executive Vice-President.

PROFESSIONAL LIABILITY INSURANCE

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Only a doctor knows a doctor's needs. Only a doctor can understand why with mounting costs he must still get the most protection for the smallest investment. And only another doctor can understand how precious is his professional reputation.

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New from SAUNDERS

Mayo Clinic Diet Manual

New (3rd) Edition!—Latest Information on Standard Diets Proven in Practice

The *Mayo Clinic Dietetic Committee* has spared no effort to make this revision as complete and as accurate as possible. It clearly reflects the advances in food, vitamin and current dietary practice that have been incorporated into Mayo Clinic procedure. Once you have established that your patient needs a special diet, you can turn to this manual for all the information you'll need to prescribe it. Each diet can be adjusted easily to the requirements of individual patients. There is a general description and a short discussion of the adequacy of each diet, with a chart showing types of food to be included and excluded in each program. Another chart shows the approximate composition.

Among the important changes for this *New (3rd) Edition* you'll find: New information on the low cholesterol diet for atherosclerotic disease—Revisions in the sections on vitamins and other food supplements—Inclusion of the new height-weight tables—The diets for children now accompany those for adults, for each condition.

By the COMMITTEE ON DIETETICS OF THE MAYO CLINIC. About 276 pages, 6"x9¼", wire binding. About $5.50.—*Just Ready!*
New (3rd) Edition

White—Clinical Disturbances of Renal Function

New!—Clarifies management problems

In this clear and logically organized new book, Dr. White offers a thorough description of the major problems in understanding and managing kidney disease. He illuminates every possible avenue that will help you answer three pressing questions: *1) Is the patient suffering from renal dysfunction? 2) What is the exact nature of the malfunctioning? 3) What can be done to alleviate or correct the condition?*

The author shows how renal malfunction affects other body systems and what physicians in various disciplines should know about kidney disease. The bulk of the book deals with specific disorders—their signs, symptoms and management. You'll find sound advice on: Renal function in gout—Inborn errors of renal (tubular) metabolism—Renal cortical necrosis—Hypertension and renal dysfunction—Acute renal failure—Neuropsychiatric aspects of renal dysfunction—Effect of age on renal function—Therapeutic use of water and electrolytes.

By ABRAHAM G. WHITE, M.D., F.A.C.P., Associate Visiting Physician and Chief of the Renal Disease Clinic, Queens Hospital Center, Jamaica, N.Y. 468 pages, 6½"x9¼", illus. $10.50. *New!*

Rubin—Thoracic Diseases

New!—Emphasizes Cardiopulmonary Relations

This volume gives you an immediately useful guide to diagnosis and therapy of thoracic disorders, both medical and surgical. Coverage embraces a host of management problems relating to diseases of the lungs, pleura, mediastinum and chest wall. The entire presentation emphasizes and integrates important cardiopulmonary relationships.

You'll find: Hundreds of brilliantly clear x-ray films to aid you in radiologic diagnosis—Explanations of specialized procedures such as cardiac catheterization—Practical discussions of *hyaline membrane disease, aspiration pneumonia, thromboembolism, pulmonary embolism, pulmonary infarction.* Mycotic diseases of lung and carcinoma of the lung are discussed with extreme clarity. Helpful material on *thoracic diseases in the young* and on *perinatal respiratory diseases* delineate valuable pediatric aspects.

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American College of Chest Physicians, Park Sheraton Hotel, New York City, November 13-17. Write: Mr. Murray Kornfield, 112 E. Chestnut St., Chicago, Executive Director.

* * *

The Fifteenth Annual Rocky Mountain Cancer Conference will be held at Denver's completely air-conditioned Brown Palace West, July 12-13, and will feature panel discussion on "Detect Cancer in Time!—Procedures, Problems and Solutions," and "Neoplasms of the Female Genital Tract."

President of both the American Cancer Society and the American Medical Association will participate in the two day program.

Morning sessions on both days of the program will be devoted to the panel discussion by round table luncheons with speakers. Individual papers will be delivered in the afternoon sessions.

The Rocky Mountain Cancer Conference, held annually in Denver is co-sponsored by the Colorado Division of the American Cancer Society and the Colorado State Medical Society.

Write: Rocky Mountain Cancer Conference, 835 Republic Building, Denver 2, Colorado.

* * *

University of Colorado Medical Center: Physical Medicine and Rehabilitation for the Clinician; June 1-3. Obstetrics and Gynecology, June 19-21; Dermatology for the General Practitioner, July 27-29; Hepatic Pathology (Limited to 24) August 7-12; Pediatrics—Clinical and Research Advances in Pediatrics and Child Guidance, August 21-25; Pulmonary Disease Seminar (Fitzsimons General Hospital), September 25-29; General Practice Review (Eighth Annual) January 7-13, 1962. Write: Office of Postgraduate Medical Education, University of Colorado Medical Center, 4200 East Ninth Avenue, Denver 20, Colorado.

* * *

Camp for Juvenile Diabetics: Camp Needlepoint is a camp for diabetic children from 7 to 16 years of age. The camp is sponsored by the Twin Ctiies Diabetes Association and will utilize the facilities of Camp Wells, Big Lake, Minnesota from August 13-20. A physician and registered nurses will be in attendance. An active camping program will be carried out as well as informal instruction in the care of diabetes. Further information and applications may be obtained from the Secretary of the Twin Cities Diabetes Association, 5225 Minnetonka Boulevard, Minneapolis, Minnesota.

The section of Ophthalmology and Otolaryngology of the Southern Medical Association announces that they are now accepting papers by physicians of either specialty living in the area of the Southern Medical Association for consideration for presentation at the next annual meeting to be held in Dallas, Texas from November 6-9.

The paper or an abstract of the paper may be sent directly to the Secretary, Dr. Albert C. Esposito, Suite 1212, First Huntington National Bank Building, Huntington, West Virginia, as soon as possible.

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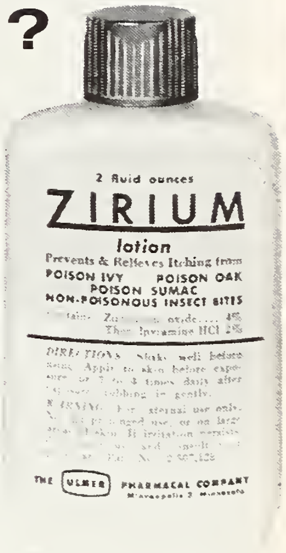
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Woman's Auxiliary

OUR CHALLENGE OF THE 60's

The medical profession has never been in the limelight as it is today and will be throughout the '60's, but the honor is a dubious one. Unfortunately, political considerations, not new advances in therapy or an increased life expectancy, are the reason for focusing attention on the medical profession.

Politicians have used "health care" as bait to win elections. Senior citizens across the nation have cast their ballots for those promising them the most spectacular, and free, health benefits. The doctor finds himself in the middle. Frequently, he is so busy caring for patients that he is unaware of the many political moves going on.

Auxiliary members can perform a great service for their husbands by assisting them in a private study of current medical issues.

We of the Auxiliary can read articles on "Care of the Aging" and "Health Insurance" in popular magazines and newspapers. We can keep ourselves up-to-date on actions of the AMA. We can learn what the laity is saying, and endeavor to possess accurate information with which to answer critics. An Auxiliary member should know the answers, for we can be most valuable ambassadors of good will if we can speak without bias and with authority.

Mrs. Herbert Ulrich, editor of the magazine of the Woman's Auxiliary to the Medical Society of the State of New York, said: "Unless we work diligently, we will experience the truth of the saying that what the federal government pays for, it eventually controls. The ultimate goal is the complete federalization of the nation's medical and hospital services, and we cannot let these proponents of socialized medicine achieve their goal."

Mrs. Ulrich is absolutely right. Let us resolve to expend more effort for medicine through our Auxiliary, and to urge those who are not members to join us and work with us. We are needed. The time is now.

Betty Gardner (Mrs. Walter P.)

HIGHLIGHTS

Total membership of the Woman's Auxiliary to the Minnesota State Medical Association is now 2,388 — 65% of total potential.

Winner of a $50 first prize in an essay contest on the economics of medical care, sponsored by the Ramsey County Medical Society, its Auxiliary, and the American Association of Physicians and Surgeons, was Sandra Sullivan, a senior at St. Joseph's Academy.

Sandra's essay "The Advantages of Private Medical Care," discussed private as opposed to socialized medicine. It also won a $25 savings bond by placing third in the State contest.

Other Ramsey county contest winners were Nancy Burke, second; and Betty Leahy, third.

A REMINDER

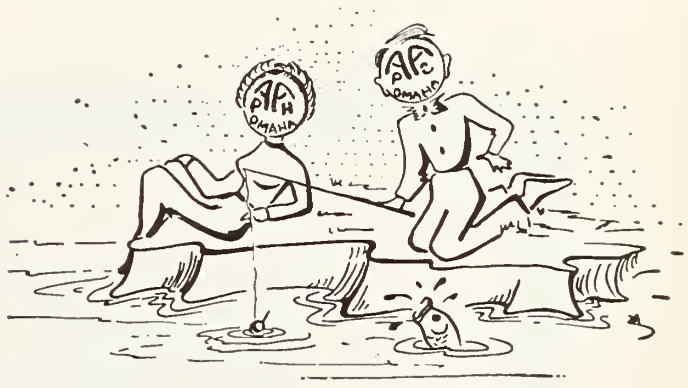
Food Faddism is the topic of AMA's project for 1961. One-half billion dollars is spent annually by Americans on worthless nutritional supplements. To alert the public to this menace to their health, the AMA has produced the film "The Medicine Man."

"The Medicine Man" is a 28-minute film depicting the deceits and dangers of food fads and nutritional quackery. In the film, nutritional faddist "Doctor" Bernard Woulff attempts to sell diet foods to the unsuspecting public, claiming their present foods are "over-processed" and "worn out." He claims his diets will cure everything from cancer to dandruff, to loss of "zest" in marriage.

This film, and descriptive literature, is free and can be obtained through the Minnesota State Medical Association, 496 Lowry Medical Arts Building, St. Paul 2. The only charge is for return postage.

Many Auxiliaries and groups have shown this film and report that results were most rewarding. Questions were lively and intelligent, and the audience was enthusiastic.

This is an excellent movie and an excellent subject, and every Auxiliary is urged to show it.



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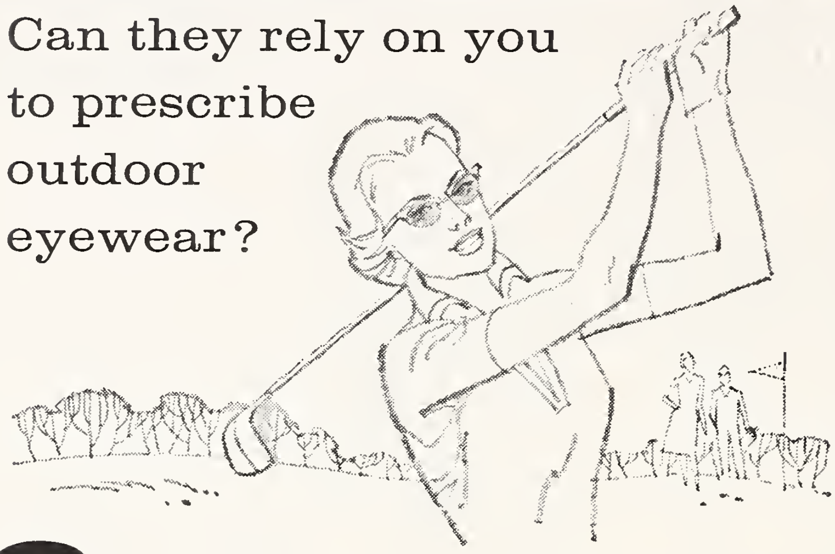

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In Memoriam

HENRY P. WAGENER

Doctor Henry P. Wagener, 71, a member of the Section of Ophthalmology of the Mayo Clinic, Rochester, died April 27, of a heart attack.

Doctor Wagener received the degree of bachelor of science from Charleston College in 1909 and that of doctor of medicine from the Medical College of South Carolina in 1913.

Doctor Wagener came to Minneapolis in 1917 as a fellow in Ophthalmology and Otolaryngology in the University of Minnesota. In 1918, he entered the Medical Corps of the U. S. Army with the grade of first lieutenant.

Doctor Wagener came to Rochester in 1920, as a fellow in Ophthtalmology in the Mayo Foundation, he was appointed to the staff of the Mayo Clinic in the Section of Ophthalmology. At the time of his retirement from the Mayo Clinic in 1955, he was professor of Ophthalmology in the Mayo Foundation, Graduate School, University of Minnesota. Since his retirement, he has devoted himself to research and writing in his specialty.

He was a member of the Minnesota Academy of Ophthalmology and Otolaryngology, the Medical Society of South Carolina, the American Medical Association, the American Ophthalmological Society, the American Academy of Ophthalmology and Otolaryngology, the Southern Medical Association, the Alumni Association of the Mayo Foundation, the Society of the Sigma Xi, and the Zumbro Valley Medical Society. He was granted Associate membership in the Minnesota State Medical Association in 1956.

Survivors include his wife and two daughters.

CHARLES M. ROBILLIARD

Doctor Charles M. Robilliard, 72, practicing physician and surgeon in Faribault for more than 40 years died May 7, following an extended illness.

He studied medicine at the University of Minnesota and took graduate work at Harvard. He practiced at Morristown before coming to Faribault in 1913. Doctor Robilliard retired from practice in 1958.

He was a member of the Rice County Medical Society, American Medical Association, a Life member of the Minnesota State Medical Association, the American Legion, the Lions Club, Nu Sigma fraternity, the Rice County draft board, the Faribault school board and the Masons.

Survivors include his wife, three sons, a brother and a sister.

GEORGE P. ERICKSON

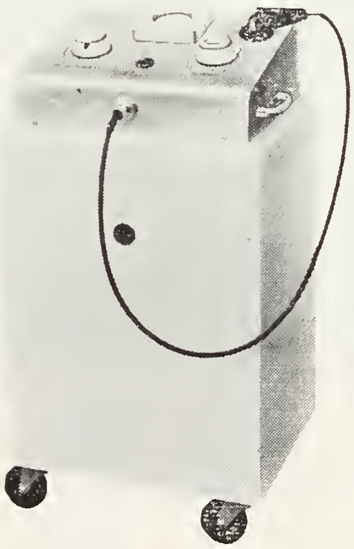
Doctor George P. Erickson, 39, deputy health officer, St. Louis County Health Department, Hibbing, died April 21. He was formerly associated with the Adams Clinic and Health Officer of the Village of Hibbing, township of Stuntz and school.

A graduate of the University of North Dakota, he received his doctor's degree from Creighton Medical School in 1948. He joined the Adams Clinic staff in 1950.

He was a member of the Range County Medical Society, American Medical Association, Minnesota State Medical Association, a member of Blessed Sacrament Church, the Third and Fourth Degree Knights of Columbus, St. Louis County Health Association. Doctor Erickson was a veteran of World War II.

He belonged to the Disabled American Veterans, Elks Club, Moose Club and the Municipal Athletic Association.

He is survived by his wife, three sons, his mother, a brother and two sisters.



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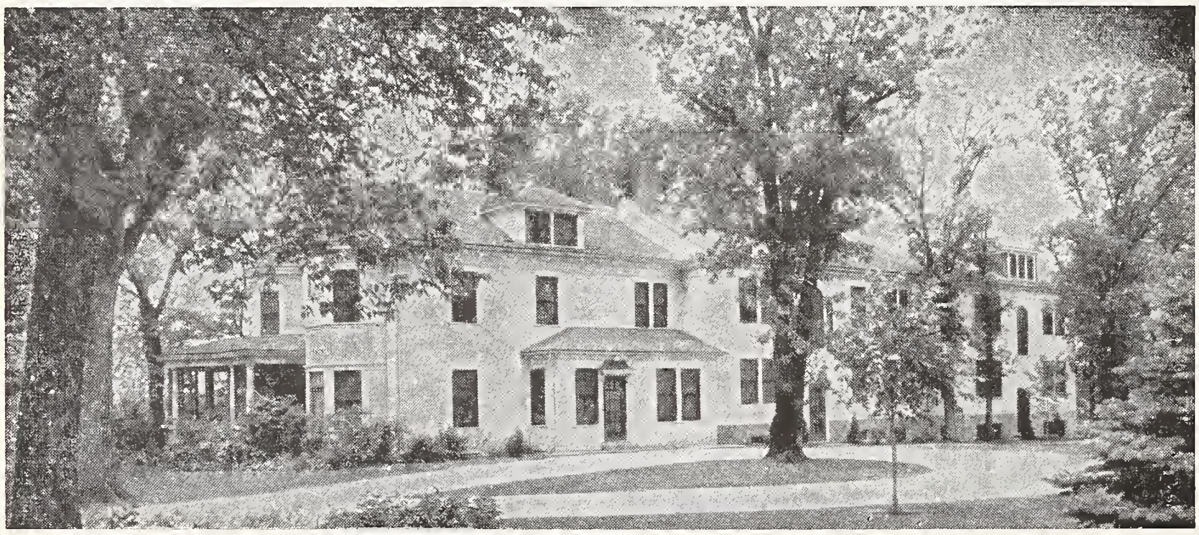

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Physician's Diary

Doctor Dale Lindquist, who has been associated with Doctors Doms and Piekert at the Elbow Lake Clinic, will leave Elbow Lake to practice medicine at Lindstrom.

* * *

Doctor J. G. Love, head of the section of neurosurgery in the Mayo Clinic, and **Doctor H. J. Svien,** consultant in neurosurgery in the Mayo Clinic, were re-elected to offices in the Harvey Cushing Society at its 29th annual meeting held in Mexico City recently. **Doctor Love,** who was president of the organization last year and presided at the meeting, was made a member of the board of directors for a five-year term. **Doctor Svien,** was re-elected secretary, a position to which he was first elected in 1959. He was treasurer in 1956, and has been a member of the executive committee since 1956.

* * *

The Board of Directors of the Passano Foundation announces that **Doctor Owen H. Wangensteen** has been selected as the recipient of the $5000 Passano Award for 1961. During the American Medical Association meeting in New York City, a reception and dinner will be held at the Statler-Hilton Hotel to honor **Doctor Wangensteen.**

* * *

Doctor B. F. Pearson, Shakopee, has been appointed to the Minnesota State Board of Medical Examiners for a term of seven years.

* * *

Doctor Lyle French, professor of neurosurgery at the University of Minnesota, discussed the origin of deep pain at the monthly dinner meeting of the Stearns-Benton County Medical Society.

The Stearns-Benton County Medical Society elected **Drs. W. T. Wenner** and **A. J. Lenarz,** St. Cloud, and **Dr. Julian DuBois,** Sauk Centre to the corporate body of Blue Shield to represent the local society before the state body.

* * *

Doctor O. Theron Clagett, head of a section of surgery in the Mayo Clinic and professor of surgery in the Mayo Foundation, was made vice president of the American Association for Thoracic Surgery at the meeting of this organization in Philadelphia on April 24 to April 26. He will advance to the presidency next year.

* * *

Doctor Lawrence M. Randall, consultant in obstetrics and gynecology in the Mayo Clinic and professor of obstetrics and gynecology in the Mayo Foundation, has just been elected president to the American Board of Obstetrics and Gynecology, Inc. to serve for an indefinite term.

* * *

Doctor John S. Siegel, Virginia, recently attended the American Academy of General Practice 1961 Annual Scientific Assembly held in Miami Beach, Florida, convention hall.

The Park Region Medical Society met in Fergus Falls recently. Those attending the meeting were **Doctor and Mrs. C. E. Carlson, Doctor and Mrs. Ed J. Tanquist, Sr., Doctor and Mrs. Edgar Sather** and **Doctor and Mrs. Vernon Kuhlmann.**

* * *

Doctor Ralph E. Spiekerman, has been appointed a member of the staff of the Mayo Clinic in Rochester, as a consultant in medicine. **Doctor Spierkerman** has completed a residency in medicine at the Mayo Foundation, a part of the Graduate School of the University of Minnesota.

* * *

Doctor Erick Reeber, Frazee, is attending a series of post-graduate courses at Crookston. The courses are sponsored by the Academy of General Practice of the University of Minnesota.

* * *

Doctor Harold C. Halvorson, Luverne, has accepted a residency in obstetrics and gynecology at Miami Valley Hospital in Dayton, Ohio. He will begin his duties there July 1. **Doctor Halvorson** has been associated with **Doctor D. M. Odland** in the Medical Center at Luverne since 1958.

Doctor R. J. Kotval, Pipestone, recently was elected president of the Southwestern Minnesota Medical Society.

* * *

Doctor Robert W. Hollenhorst, consultant in opththalmology in the Mayo Clinic and associate professor of opththalmology in the Mayo Foundation, was a guest lecturer at the opththalmology postgradaute conference program held April 24, 25, 26 at the Horace R. Rackham School of Graduate Studies, University of Michigan School of Medicine.

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Doctor C. L. Oppegaard, President of the Minnesota State Medical Association, recently attended the Iowa State Medical Association annual meeting at Des Moines. **Doctor Oppegaard** also attended the Wisconsin State Medical Association meeting in Milwaukee.

* * *

Doctor George M. B. Hawley, Red Wing, was recently appointed health officer. In assuming his duties, **Doctor Hawley** replaces **Doctor W. R. Miller,** who recently accepted a new position in St. Paul.

* * *

Doctor Louis H. Wittrock, Watkins, for the second year attended the annual refresher course of postgraduate medical education held in Fort Lauderdale, Florida. The course was sponsored by the American Academy of General Practice.

Doctor Hamilton Montgomery, consultant in dermatology in the Mayo Clinic and professor of dermatology in the Mayo Clinic was honored at a meeting of the Minnesota Dermatological Society on April 28th at the Ancker Hospital in St. Paul.

* * *

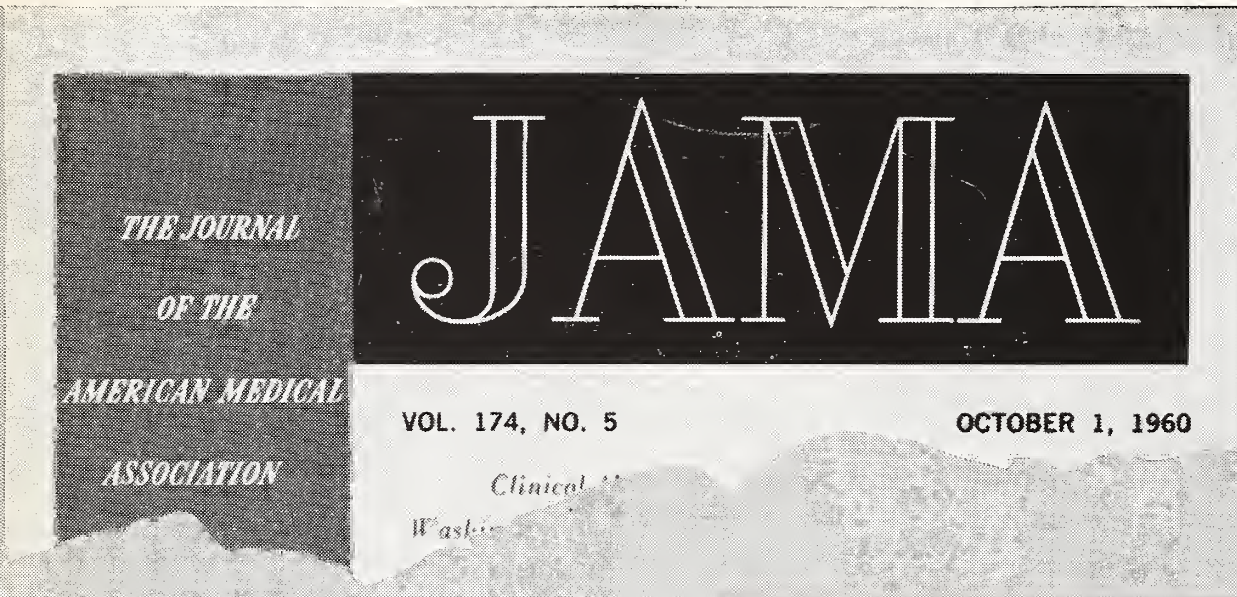
Doctor Winston R. Miller, former Red Wing physician and city health officer, has become medical director of the St. Paul Out-Patient Center.

* * *

Doctor Harold E. Coulter, Madelia, has accepted an appointment at University of Minnesota Hospitals, department of anesthesia. **Doctor Coulter** began work at the University of Minnesota Hospitals May 1st.

* * *

Doctor and Mrs. O. J. Swenson, Waseca, and **Doctor and Mrs. Donald Swenson,** Mankato, recently attended the American Academy of General Practice annual scientific assembly.



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A new doctor will be joining the Watertown Medical Clinic with **Doctor J. W. Bratholdt** and **Doctor D. R. Philip.** He is **Doctor Richard H. Searl.**

* * *

Doctor John W. Waugh, Rochester, a member of the Commission of Ecumenical Mission and Relations of the United Presbyterian Church, attended a meeting in New York recently.

* * *

Doctor and Mrs. L. M. Ekstrand and **Doctor and Mrs. Earl Ellis, Elgin,** recently attended the annual Scientific Assembly of the American Academy of General Practice.

* * *

Doctor A. K. Stratte, Pine City, attended a four county medical advisory committee and welfare directors meeting at Cambridge recently. The meeting was held in the Isanti county courthouse. The topic of discussion for the meeting concerned the medical care program for welfare recipients.

* * *

Donald Stanton Asp, a University of Minnesota Medical School freshman, has been named the ninth recipient of the Rural Medical Scholarship, awarded annually by the Minnesota State Medical Association.

Doctor William Thomas has joined **Doctor L. L. Kallestad** in the Kallestad building, Wayzata.

* * *

Doctor C. C. Craig, International Falls, was presented a Citizen of the Year citation by Leonard Melville, president of the International Falls Federation of Teachers.

* * *

Doctor C. W. Rumpf, Faribault, was honored recently at St. Mary's Hall when members of the senior class dedicated the 1961 Fleur-de-Lis, the school yearbook to him. **Doctor Rumpf** has served as school physician for many years.

* * *

Doctor Charles Zinn, Wayzata, will be associated with **Doctors W. W. Rieke and D. W. Feigal** in Wayzata. **Doctor Zinn,** who is a graduate of the University of Minnesota Medical school, has been at the Elk River Clinic since 1956 following internship at Ancker Hospital, St. Paul.

* * *

The Family Medical Clinic, newly remodeled medical offices and facilities of **Doctors Westerman and Lehrer,** were opened recently.

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1. Barclay, P. L.: J.A.M.A. 174:474, Oct. 1, 1960.

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PHYSICIAN, MINNESOTA LICENSED, available for locum tenens from July 1st to October 1st, 1961. Either general practice or ENT practice satisfactory. Southern Minnesota location desired. References. Write Box 137, care of MINNESOTA MEDICINE. 5-61

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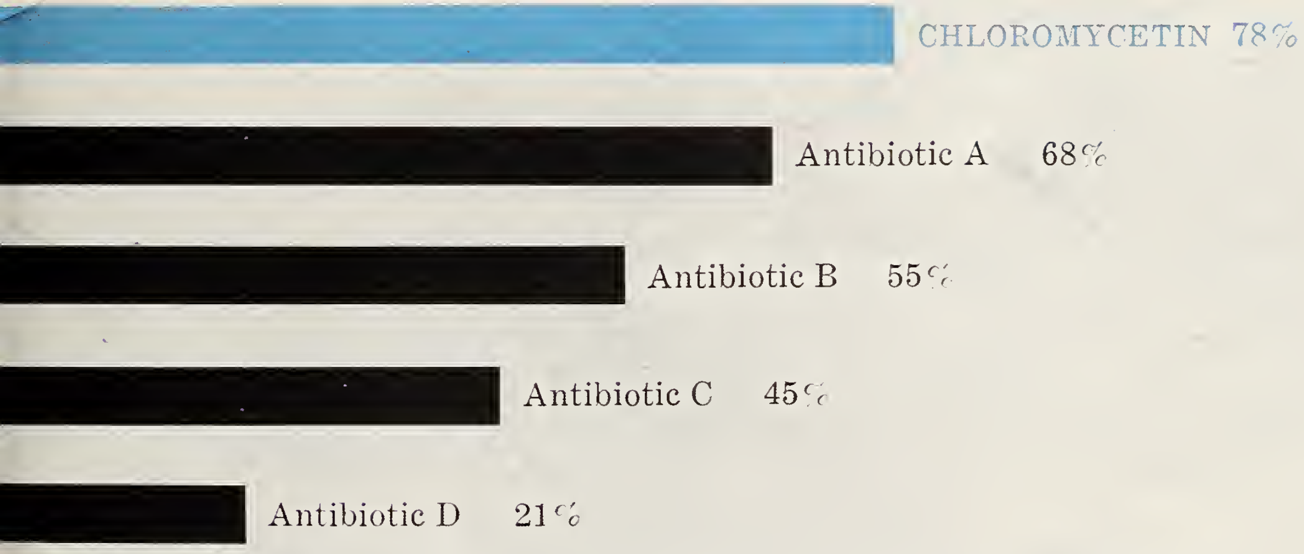
N VITRO SENSITIVITY OF 250 STRAINS OF STAPHYLOCOCCI
TO CHLOROMYCETIN AND TO FOUR OTHER ANTIBIOTICS*



These strains of coagulase-positive staphylococci were isolated from hospitalized patients at a arge county hospital during the year 1959. Sensitivity tests were done by the disc method.

Adapted from Bauer, Perry, & Kirby[1]

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Contents fo

SCIENTIFIC ARTICLES

ORIGINAL CONTRIBUTIONS

Biological Warfare Could Wipe Out Our Civilization
D. S. Fleming, M. D., Minneapolis, Minnesota..259

Civil Defense Medical Organization of Target Cities
Karl R. Lundeberg, M. D., Minneapolis, Minnesota..................................263

Requirements for Training in First-Aid and Hospital Procedures
Alvan Sach-Rowitz, M. D., Moose Lake, Minnesota...............................268

Hospital Organization for Disasters and Evacuation
Frederick Breining, Coordinator, Minneapolis, Minnesota.......................275

Hospital Assignments for Dentists
Russell W. Bunting, D. D. S., Washington, D. C.......................................278

Biological Warfare and The Livestock Industry
Jack G. Flint, D. V. M., St. Paul, Minnesota..279

Chemical Warfare Another Serious Hazard
R. E. Frazier, Minneapolis, Minnesota...283

Concepts of Medical Supply Assessment in Terms of Disaster Preparedness
Arnold H. Dodge, Washington, D. C..286

Minnesota, The Medical Profession and Civil Defense
Leo A. Hoegh, Washington, D. C...291

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Minn. Society of Clinical Pathology

Medicine

uly • 1961

Volume 44
Number 7

MISCELLANEOUS ARTICLES

EDITORIALS

Preparedness — Second Only to Keeping Peace
Governor Elmer L. Andersen....294

Civil Defense Control Center
C. L. Oppegaard, M. D., President,
Minnesota State Medical Association....294

Disaster Medical Care in the Sixties
Carroll P. Hungate, M. D., Kansas City, Missouri....295

PRESIDENT'S LETTER....297

Varied Actions Taken by the House of Delegates....299

ANNUAL MEETING....300

THE ART OF MEDICINE....304

MINNESOTA BLUE SHIELD....A-27

MEDICAL EDUCATION....A-28

MEETINGS AND ANNOUNCEMENTS....A-29

WOMAN'S AUXILIARY....A-30

IN MEMORIAM....A-33

THE PHYSICIAN'S DIARY....A-35

CLASSIFIED ADVERTISING....A-37

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BIOLOGICAL WARFARE could wipe out our civilization

Biological warfare could be more deadly, more horrible than nuclear bombing! Here is a thoughtful analysis of the problem.

D. S. FLEMING, M. D.*
Minneapolis, Minnesota

Individual survival will be the essential problem of civil defense in the next conflict. The rule which will apply will be survival "not of the fittest necessarily, but of the knowingest." The elements of individual survival will be food, water, and knowledge of the basic principles of health. Individual survival is the keystone in building survival of the nation.

The threat of biological warfare cannot be ignored, and every individual and community should examine its potentialities in detail. Biological warfare is defined as the intentional use of living organisms, or their toxic products, to cause death, disability, or damage to man, animals, or plants.

There is no record of the deliberate use of biological warfare as a military weapon in the past. But there are many records of the devastating effects of epidemic diseases during wars, which would be analogous to the aims of deliberate biological warfare. Disease has immobilized or destroyed entire armies, and has played a decisive role in the final outcome of many battles. In World War II, as an example, malaria in the early days was responsible for seven times as many casualties among American troops in the Southwest Pacific area as was enemy action. These effects were confined almost entirely to the armed services.

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* Minnesota Department of Health

But biologic warfare has its greatest potentialities as a strategic weapon, not primarily to kill people, but to destroy the economy of the nation through incapacitation of the working force and the reduction of crops and domestic animals.

The superior effectiveness of biological warfare is a direct result of the possibility of covering very extensive target areas with a minimal expenditure of effort or equipment. Fothergill has described two experiments conducted along a seacoast, which illustrate this point.

In the first trial, an inert substance was disseminated from a boat traveling some ten miles offshore under appropriately selected meteorological conditions. Four hundred and fifty pounds of zinc cadmium sulfide, in particles of 2.0 microns in size, were disseminated while the ship was traveling a distance of 156 miles.

Appropriate sampling procedures demonstrated that this aerosol traveled a maximum sampled distance of 450 miles and covered an area of over 34,000 square miles. The concentration of particles could have been readily increased by increasing the source strength.

In a second demonstration, 130 gallons of an aqueous suspension of the spores of *B. subtilis,* var. *niger,* was aerosolized from the rear deck of a small Naval vessel, cruising two miles offshore and vertical to an onshore breeze. Meteorologically, there was slight lapse condition, a moderate fog, and 100 per cent relative humidity. Sampling stations had been set up on shore in homes and offices within the trial area.

The results showed that an extensive area was covered. The cloud was sampled for a distance of 23 miles downwind from the source. Approximately 100 square miles was covered within the area sampled, and it is likely that an even greater area was covered, particularly downwind.

This biological trial was carried out with a line source of only two miles in length, and the aerosol was generated by inefficient equipment. It is easy to conceive of the possibility of better equipment increasing the source strength to any desired degree, and of extending the line source for 10, 100, 500 miles or for any distance.

This possibility of the strategic coverage at long range of very extensive target areas is the major threat of biological warfare to our nation.

If we keep in mind the great capability of aerosols to penetrate structures, it is obvious that there would be widespread contamination throughout the target area, with possible additional multiplication of the disease organisms in new foci. All living things in such a target area would inhale the aerosol.

The potential advantages of such biological warfare are fairly obvious. First, there is a wide choice of organisms and toxic products which could be used, either singly or in combinations. These include disease agents that cause illness not normally found in our country, such as the virus of Russian Spring-Summer Encephalitis, or the virus of Rift Valley Fever, and disease agents causing diseases that have been controlled in the past but which could once more become established. These might include Asiatic cholera, and smallpox of man, and glanders, and foot and mouth disease of animals. Endemic diseases could readily be intensified and converted into epidemic conditions by widespread dissemination of the etiologic agents of such diseases as plague, tularemia, tuberculosis, brucellosis, etc.

Specific biological warfare agents may be used for the reduction or destruction of agricultural crops and domestic animals.

A second advantage of biological warfare is its usefulness for sabotage before a main attack. Thus, it forms a particularly devastating threat as a "cold war" weapon, in the absence of a "hot war."

Biological warfare likewise avoids destruction of the physical resources in captured territory. The unusual vulnerability of civilian populations to such attacks, as a result of radiation, poor nutrition, and stress, add to its advantages.

The methods of dissemination have been indicated already. These are by sabotage, through introduction of the agent into water supplies, food supplies, and ventilating systems; and by introduction of infected insect vectors. Overt methods would largely be by means of aerosol clouds under suitable meteorological conditions. Some viruses, for example, produce infection both when inhaled, or when ingested in contaminated food or milk.

The difficulties of defence against biological warfare at present are as readily appreciable as are the advantages of this mode of attack. Principal problem would be the rapid detection and identification of the toxic agents being utilized. For example, virus laboratories require experience with, and intensive study of an etiologic agent over months and years of tests before developing satisfactory diagnostic procedures; yet, because of intrinsic hazards to laboratory workers and of introducing exotic diseases into the country, existing virological laboratories and research workers have had no opportunity of working with some of the viruses that might be most effectively used in biological warfare.

Other problems of defence would be the obvious inadequacy of a program based upon wearing protective masks, or of mass immunizations. When it is recalled how long and intricate is the procedure for producing a satisfactory vaccine against a virus agent, for example, and how great a logistics obstacle is the application of vaccinations to humans, it is clear that this approach is not adequate. Chemo-prophylaxis might be suitable against certain types of infecting agents, if quickly identified.

What then, can be done to develop an adequate defence against biological warfare? Certain pre-planning measures, if supported and intensified, can benefit existing conditions of public health as well as lead to a degree of defence against this real hazard.

Thus, there must be a strengthening and augmentation of existing health programs. These services already have familiarity and experience with past and present health conditions and protective measures, and can most readily and effectively handle new problems.

There must be expanded support of research into detection and identification technics, and work in the field of vaccine production. Such activities are illustrated by the course of procedures underlying current virus vaccine work. Initial vaccines start out as 10% formalinized suspensions of killed virus. With further study and experimentation, vaccines are made from virus grown in suckling mice, then in tissue cell cultures, and finally as attenuated, live virus strains.

Scientists required for such work include entomologists, epidemiologists, virologists, all manner of skilled personnel. Existing virus laboratories should be expanded and additional ones should be developed. Visitors to iron curtain countries have been impressed with the number and variety of virological laboratories and institutes, centers for serum and vaccine production and testing, and the abundance of well trained and skilled scientists working in these areas.

By building up our own resources and facilities and by encouraging continued dissemination of technical information, we can build up our needed resources for health maintenance, and at the same time defend against biological warfare.

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2. Colonel Dan Crozier, M.C. Civilian Medical Problems in the Defense Against Chemical and Biological Weapons. Presented at Ninth United States Civil Defense Council Conference, September 21, 1960, Minneapolis, Minnesota.

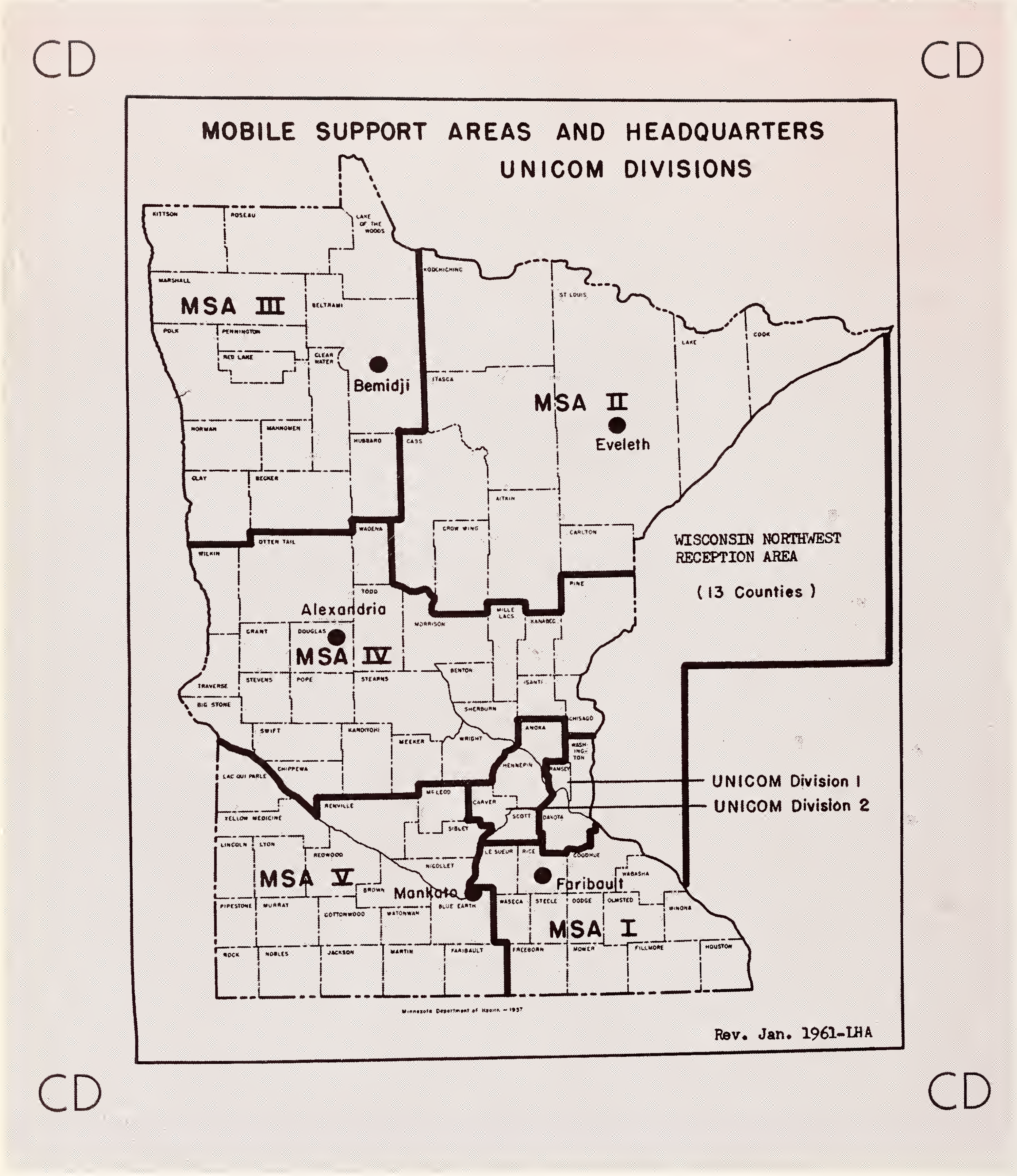
ANXIETY-TENSION-FATIGUE SYNDROME

This syndrome is an anxiety state accompanied by neuromuscular tension, physiologic disturbance and fatigability.

The patient is usually highly intellectual, alert, constantly on guard and preoccupied with his mental and physiologic status. A feeling of impending disaster, fatigue, inability to rest and mental depression are part of the complaints.

Somatic manifestations are evident by tenseness of the neck muscles, tight throat, blurred vision, dizziness, rapid heart, emesis, spastic bowel, diarrhea, constipation, sweating or a great variety of physiologic changes.

Robert H. Durham



MOBILE SUPPORT AREAS AND HEADQUARTERS
UNICOM DIVISIONS

CD
CD
MSA III
Bemidji
MSA II
Eveleth
Alexandria
MSA IV
MSA V
Mankato
Faribault
MSA I
WISCONSIN NORTHWEST RECEPTION AREA
(13 Counties)
UNICOM Division 1
UNICOM Division 2
Kittson
Roseau
Lake of the Woods
Marshall
Beltrami
Koochiching
St Louis
Lake
Cook
Polk
Pennington
Red Lake
Clear Water
Itasca
Norman
Mahnomen
Hubbard
Cass
Clay
Becker
Aitkin
Carlton
Wadena
Crow Wing
Otter Tail
Wilkin
Pine
Todd
Mille Lacs
Kanabec
Morrison
Grant
Douglas
Traverse
Stevens
Pope
Stearns
Benton
Isanti
Big Stone
Sherburne
Chisago
Swift
Kandiyohi
Meeker
Wright
Anoka
Washington
Ramsey
Hennepin
Chippewa
Lac qui Parle
McLeod
Carver
Scott
Dakota
Renville
Yellow Medicine
Sibley
Le Sueur
Rice
Goodhue
Wabasha
Lincoln
Lyon
Redwood
Nicollet
Brown
Blue Earth
Waseca
Steele
Dodge
Olmsted
Winona
Pipestone
Murray
Cottonwood
Watonwan
Rock
Nobles
Jackson
Martin
Faribault
Freeborn
Mower
Fillmore
Houston
Minnesota Department of Health — 1957
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Rev. Jan. 1961-LHA

Civil Defense Medical Organization of Target Cities

KARL R. LUNDEBERG, M. D.[*]
Minneapolis, Minnesota

Broadly speaking, the planning for Medical Civil Defense in a target city should provide for two possibilities; (1) evacuation, and (2) operation of a medical service for a partially evacuated city or a city that has received an enemy strike.

In the first instance, planning is aimed primarily at the salvage of medical and paramedical personnel, of organized hospital staffs, and of vital drugs and medical supplies and equipment. This is passive defense of the purest type—running away in order to fight from a better position. At the moment, this tactic appears to be the only one with any promise of success, and the fact is recognized by the Minnesota State Survival Plan which, in brief, directs dispersion of personnel and equipment, under certain conditions, from the large population centers of the State.

Starting with the premise that an evacuation of the target city might be directed by the State authorities, what steps can and should be taken by those responsible for medical planning?

Reference to the State Survival Plan will show the main features of medical organization and mission for all subordinate commands and areas. A target city must adjust its plans to fit in with the prescribed pattern. Accordingly, three chief functional divisions for each Health and Medical Service will be necessary: (1) Medical Supply, (2) Health and Special Weapons Defense, and (3) Medical Care. It is in the latter area that most physicians, dentists, nurses, and supporting personnel will be assigned.

---

[*] Commissioner of Health

The target area cities of Minnesota contain a large proportion of the available medical talent, hospitals, and medical supplies of the State. The medical mission of such cities is first and foremost to secure the maximum salvage of these precious resources in order to assist non-target areas to handle the casualty care load and the long-range medical care needs of the surviving population. These requirements dictate two immediate lines of action: (1) The evacuation and relocation of existing hospitals, and (2) the establishment and operation of emergency treatment stations as close as possible to the anticipated area of destruction, calculated to be, in this hydrogen age, beyond the 25-mile circle from the downtown area ('D' Ring).

Site-to-Site Relocation of Hospitals

Each hospital must have a written plan for the orderly relocation of its professional staff, transportable patients, and salvagable drugs and supplies. Most hospitals will include this as one of three sections of its disaster plan for dealing with the emergencies of fire, local expansion and wartime relocation. In Minneapolis, the best plans to date have been those prepared by small Civil Defense or Disaster Committees under the direct supervision of the hospital administrator. The chief functional divisions of the hospital should be represented on the working committee including, among others, the professional services, maintenance, and administration. The hospital medical civil defense director should be given considerable responsibility for the practicability and adequacy of the planning. The target area city civil defense health and medical chief will usually be available for consultation and assistance. Final plans must have the approval of local Civil Defense authorities since evacuation entails coordination with other services, especially transportation and police.

It is unnecessary to add that written plans without indoctrination and orientation of staff are useless. An ongoing system of periodic briefing and orientation of new staff members is essential as is also liaison with the mobile area hospital community that is designated to receive, house, and support the hospital in its wartime setting.

Since the basic responsibility for definitive hospital and out-patient care of the surviving population rests with the five mobile support areas, relocating metropolitan hospitals can limit their initial planning to the matter of effecting the maximum salvage of personnel, patients and equipment. Surviving elements of the hospital report themselves to the receiving hospital town for incorporation into, and support of, its total medical mission. In some instances the relocating hospital may serve as the framework upon which will be built an expanded hospital center. In other instances surviving elements from metropolitan hospitals will be incorporated into existing facilities in the relocation city. Unpredictable factors of warning time, weather and transport difficulties will dictate the eventual status of evacuating target area hospitals. The immediate problem is to plan so as to squeeze the maximum advantages out of the circumstances that exist at the time of the alert.

More detailed information and suggestions for implementing target area hospital Civil Defense planning will be found elsewhere in this issue of MINNESOTA MEDICINE.

Emergency Treatment Stations

The next problem facing the Medical Care Division is that of planning for the staffing and operation of the facilities needed for the handling of casualties streaming from a target city that has suffered an enemy attack. The following brief orientation to the E.T.S. has been abstracted from the Minnesota State Survival Plan:

An E.T.S. will be located on each highway evacuation route in the first community beyond the 'D' Ring possessing sufficient resources to furnish the required facilities, i.e., buildings, housing for personnel, etc. It may be necessary to change the location of the E.T.S. in relationship to the actual location of ground zero because of fallout, etc. The St. Paul-Minneapolis UNICOM Division Commanders will order any required relocation of their supporting E.T.S.'s in the post-attack period.

The E.T.S. is essentially a mobile unit. It is a 128-litter hospital with 100 additional litters for holding.

The personnel requirements of the E.T.S. include the E.T.S. group and two forward aid groups consisting of litter bearer teams of 96 first aid technicians and ambulance groups of 20 first aid technicians.

Hospital Relocation Sites

Location	Hospital	Relocation Site
Minneapolis (Unicom II)	Abbott & Janney Children's	Litchfield
	Asbury-Methodist	Hutchinson
	Lutheran Deaconess	Glencoe
	Doctors Memorial	Glenwood
	Fairview	St. Peter
	Minneapolis General	Willmar
(Oak Terrace)	Glen Lake Sanatorium	Granite Falls
	Glenwood Hills	Paynesville
	Kenny, Elizabeth Inst.	Waseca
	Mount Sinai	Mankato
	Northwestern	St. Peter
	St. Andrew's	Alexandria
	St. Barnabas	Olivia
	St. Mary's	Mankato
	Shriners	Princeton
	Swedish	New Ulm
	University of Minnesota	St. Cloud
	Veterans Administration	Rochester
St. Paul (Unicom I)	Ancker	Albert Lea
	Bethesda	Rush City
	Children's	Red Wing
	Gillette	Pine City
	Midway	St. Croix Falls, Wis.
	Miller	Menomonie, Wis.
	Mounds Park	Durand, Wis.
	Northern Pacific	Rice Lake, Wis.
	Riverview Memorial	Zumbrota
	St. John's	Menomonie, Wis.
	St. Joseph's	Durand, Wis.
	St. Luke's	Red Wing

The overall organization will be commanded by a chief, with a deputy for the E.T.S. and the forward aid groups. The Civil Defense director of the selected E.T.S. community and the Health, Medical and Special Weapons Defense Service chief of the community are responsible for coordinating the recruitment and organization of the local supporting staff of the E.T.S.

Total staffing of an E.T.S. for 24-hour capability is 370, including forward aid personnel. Of the total, eight physicians and six dentists and or veterinarians will be recruited from the target area or other areas. The remainder of the staffing needs will be recruited from the community in which the E.T.S. is located and, if necessary, from nearby communities.

The E.T.S. will provide lifesaving, emergency medical care for (1) casualties removed from the target area by the forward aid groups, (2) casualties who make their own way out of the target area, and (3) the resident population of the community in which the E.T.S. is located. Patients in need of further care will be transferred to expanded hospital facilities in the mobile support area.

Surgery will be limited to procedures of short duration. Guillotine amputation of mangled limbs may be necessary. Blood will not likely be available but blood substitutes are expected. First aid treatment and dressing supplementing those of the forward aid team will be done. The E.T.S. will not have a clinical laboratory nor x-ray facilities unless already present in the E.T.S. town. It is anticipated that the E.T.S. will function up to three weeks, the first week around the clock.

The supporting E.T.S.'s of the St. Paul-Minneapolis target area will be under the command of the Twin Cities Civil Defense organization prior to an attack, but in the post-attack operation will come under the command and control of the two Unicom Division Commanders.

For target areas other than the St-Paul-Minneapolis target area, their supporting E.T.S.'s will be under the command and control of the Civil Defense organization of the community in which they are located, both prior to and after an attack.

For target areas other than the St. Paul-Minneapolis target area, any required relocations of E.T.S.'s will be upon order of the Mobile Support Area Commander or higher authorities.

Location of Emergency Treatment Stations

UNICOM I	UNICOM II
Baldwin, Wis.	Cambridge
Cannon Falls	Delano
Chisago City	Elk River
Ellsworth, Wis.	Faribault
New Richmond, Wis.	Jordan
North Branch	Monticello
Northfield	New Prague
Red Wing	Norwood
St. Croix Falls, Wis.	Rockford
Spring Valley, Wis.	Silver Lake
Taylor Falls	Waconia
	Watertown

The Public Health and Special Weapons Defense Division

The Twin Cities Civil Defense organizations would administer a health service in the designated UNICOM area, consisting of Anoka, Hennepin, Scott, and Carver counties in the case of Minneapolis (Unicom 2), and Ramsey, Washington and Dakota counties in the case of St. Paul (Unicom 1). Public health control in a Civil Defense disaster as well as in everyday life, is peculiarly a responsibility of government, whether it be civil or emergency government in war. Predisaster planning, therefore, is aimed initially at (1) securing the maximum salvage of the strong public health potentials of the two cities, and (2) aiding the several constituent counties in organizing and coordinating their own health planning. Civil Defense works through organized government and the county commissioners and the county Civil Defense organization would constitute, in wartime, the machinery through which UNICOM 1 and 2 headquarters would exercise overall control in matters of public health.

In UNICOM 2, each of the four counties (called sectors in time of emergency) could, under favorable conditions, be strengthened by the assignment of 10-12 public health nurses and 6-8 trained sanitarians deployed from the Minneapolis Health Department. Such personnel would be integrated into the county wartime health set-up and would greatly strengthen the capability of the counties to meet the terrible conditions that would result from destruction of the metropolitan area. Thus, under favorable conditions the peacetime Minneapolis Health Department would be dispersed through the four county sectors of UNICOM 2 and would operate with the existing county health departments, but with overall control and coordination centered in the Medical Section of UNICOM 2 headquarters at Buffalo (or alternate site).

On the other hand, each of the counties comprising UNICOM 1 and 2 might never receive health personnel from the target area. This would not diminish their responsibilities for the establishment of an effective health organization to deal with the disaster in their midst. This fact should impel the peacetime government officials in every county to take energetic and intelligent action to plan how they would meet the basic requirements of health - control - for - survival, whether they be counties surrounding a target area, or remote counties which would have to deal mainly with the management and care of refugees.

Medical Supply Division

In the Twin Cities area, responsibility for planning for salvage and distribution of critical medical supplies and equipment has been placed upon the organized drug industry under the direction of the Minnesota State Pharmaceutical Association. The functional breakdown in the Division is indicated in the Organizational Chart. This approach might well be tried elsewhere in the State as it would seem reasonable to call in those who know most about the subject to work out details that apply to several thousand individual enterprises. (See Mr. Harry Moen's article in this issue.)

Summary

In this target area city we have distributed the basic responsibilities for planning among three groups or interests, as follows: Public health to the Chief Health Officer; Medical supplies to the Pharmaceutical, Drug and Medical Supply industries; and Medical Care to organized medicine. In the Twin Cities organized medicine is represented by the Hennepin and Ramsey County Medical Societies. The Civil Defense committee of these societies, under the declared policy of the Minnesota State Medical Association and the American Medical Association, must develop workable plans for the salvage of existing hospitals, for the care of casualties, and for long-range medical care of the surviving population. Their success will be in direct proportion to the degree of assistance and understanding given them by the individual physicians comprising the medical profession in this area.

HEALTH SERVICES IN AN EMERGENCY

It is important that we focus attention upon our community health services and personal survival.

The National Plan for Civil Defense and Defense Mobilization, promulgated by the President in October, 1958, defines the mission of non-military defense as an integral part of the total defense of the nation. This mission includes: 1. Protection of life and property by carrying out non-military functions; and 2. Mobilization and management of resources and production.

All civil defense activities bear directly upon our health program. The plans should group these seemingly unrelated activities in such a way that they will function in unison, under control, to produce a desired result—survival of the community.

The primary mission of emergency health services is to: Minimize effects of disaster, through such measures as mass casualty care, emergency preventive health measures, and rehabilitation; maintain the non-casualty population in a state of good health; and restore essential community health services in order that the country can recover as quickly and effectively as possible.

The *major problem* is the marked *disparity* that will exist between resources that remain after attack and requirements for these resources in casualty and non-casualty care.

Food and water may be contaminated and essential services such as heat, water, food, and medical care may be denied for extended periods of time.

The Basic Elements of the Medical Plan must include measures to:

1. Minimize the number of casualties that will result from the attack.
2. Develop capability to provide mass casualty care.
3. Develop capability of the community to organize and institute efficient emergency health services.
4. Develop mutual assistance plans with adjacent areas.

Health mobilization planning at all levels must emphasize the most efficient management and utilization of resources in order to ensure the greatest amount of health services to the greatest number of people in the event of a civil defense disaster. It must accomplish this through the utilization of health services in-being and must place primary emphasis upon the local community—the operating base.

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Requirements for Training in First-Aid and Hospital Procedures

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In our Civil Defense planning for the medical care of casualities resulting from nuclear attack, we must be realistic in our thinking. We must allow for the strong probability that we shall be unable to evacuate medical and para medical people from our urban centers where the largest per cent of them are located.

With the possibility of thousands of casualties being thrust upon any community at one time along with the great disparity in medical and allied personnel, it becomes more and more evident that the dependence for care of casualties must be shared by lay people in great numbers.

This concept leads to the realization that we must assume the enormous task of training lay persons to perform a major part in the program providing for casualty care. Of course, these individuals must work in shifts around the clock under the supervision of trained nurses and others. All possible procedures must be carried out by these persons in order to effect the best utilization of our professional people. Our nurses must be upgraded to act in a supervisory capacity only because of the great deficiency in their numbers. We must realize that one nurse can supervise a large number of lay hospital workers if the latter are properly pretrained in first-aid and hospital procedures. This situation results in the necessity for setting up training programs which will have for their object the training of large numbers of lay individuals in necessary fields to prepare them for fulfilling requirements of casualty care.

I believe that too much attention has been paid to tables of organization in planning the manning of the Civil Defense Medical installations. In setting up these tables we have been thinking too much of existing hospital requirements under normal conditions. We must assume that, unlike in the army where there is command control, people will not always be dependable for prolonged working in medical installations. Personal and family obligations will enter the picture resulting in a large turnover of personnel. Furthermore, due to the type of casualties with the many burned cases complicated by other injuries, the care required will be rather constant throughout the twenty four hours every day for a long period. Therefore, in view of the great possibility of losing hospital workers after short periods, and in view of the fact that untrained people cannot function in medical installations, we must concentrate on developing plans at once to interest and train every possible person who is not assigned to other Civil Defense work in essentials of first-aid with special effort being made to encourage as many as possible of those completing first-aid courses to enroll in hospital procedure classes. Now just how are we going to do this? Let us again analyze the situation from the standpoint of requirements.

In the first place, uniformity in training is essential throughout the state. This allows for more efficient preparation and control of the program.

Secondly, some type of command function must be secured to insure continued active participation on the part of our medical profession. It is impossible to train lay people to function in our medical installations unless we have complete cooperation of our medical men.

It is very simple to satisfy the first requirement for uniformity in medical training programs. I think that the handling of the Civil Defense Medical Program rests for the most part in the hands of the Health Departments of the states. These departments with their competent staffs with the assistance of the State Medical Societies should have no difficulty in establishing unified organization and training programs.

The second requirement which involves the participation of medical men to work under some type of chain of command authority should also not be too difficult to satisfy. This can be accomplished by having the State Medical Societies pass resolutions accepting the responsibility for taking on the obligation of organizing and training in medical installations in their respective states.

The organization and training activities could be carried out through direct action of the County Medical Societies in the various counties under their jurisdiction. The Civil Defense Committees of the County Medical Societies would pass the program down to the County Medical Chiefs who would in turn be responsible for seeing that the Municipal Medical Chiefs of their counties set up the organization and training plans in their areas.

Regular checking on all activities of medical installations could thus be instituted by the Civil Defense Committees of the county medical societies and progress reports could then be sent at prescribed intervals to higher eschelons such as the Support Area Medical Chief, the State Medical Civil Defense Committee and the Executive Secretary of the State Board of Health. This would give absolute control of the organization and training programs and failures on the part of individual medical men to go along with the program would be brought to light thus allowing for correction of faults on their part or for their replacement.

County Medical Societies reach down to the grass roots in their influence on physicians, and the members feel certain moral responsibility to go along with the wishes of their organizations. These County Medical Societies are probably the only forces that can effect the continued participation of doctors in the Civil Defense effort. The Support Area Medical Chiefs upon whom the responsibility for casualty care rests after nuclear attack cannot exert command control over medical men in their support area before attack, yet it is necessary that they have positive assurance that sufficient medical capabilities will be at their disposal after attack. This is an impossible situation unless they have the full cooperation of all County Medical Societies to organize and staff all necessary medical plants and to insure that proper training of lay personnel to man these installations is provided.

This system for control of organization and training has been adopted by the State of Minnesota which is now in the process of perfecting the relationship between the State Civil Defense Organization and the medical societies.

Now let us consider the type of training desirable starting first with first-aid. The present Red Cross courses are not reaching the huge number of people who must be trained for service after nuclear attack. Probably the big reason for this failure to train required numbers is the fact that examinations have been required for completion of the courses. Furthermore, the courses are not as practical as they might be. The "Eager Beavers" take the courses and profit thereby, but the average "Joe" is frightened away by the excessive lecturing which tends to smother with a mass of details the principles which should be learned.

In Moose Lake, Minnesota, about two years ago a pilot test plan for teaching first-aid was carried out in which instruction was given by the booth or station method mainly by use of visual aids with a minimum of lecturing. I'll tell you how this was done. We started first with an orientation program. We wrote several newspaper articles explaining the plan. Then we established the machinery for organization. We had the Commercial Club sponsor the organization of a committee with representatives from all organizations in the area, including the outlying country. All whom we thought would make good instructor material were contacted and asked to volunteer to take the instructor courses to be offered. We obtained over 75 volunteers. We contacted the State Red Cross requesting help to train our instructors. They responded wholeheartedly even though they knew our plan for conducting our training later was to be along a different line than the usual Red Cross Course follows. They gave our prospective instructors the Standard and Advanced Red Cross first-aid courses. After they finished with our instructors, the State Red Cross sent a man from Minneapolis to give two weeks of intensive instructor training every night. Then after that I took them for two months of training for two nights a week, teaching them to use the booth system of teaching. Here they were taught to follow a prepared instruction sheet which was drawn up to keep everything simple and to guide them in the use of the gadgetes and other visual aids, and to make sure that they emphasized sufficiently the two or three important points to be stressed in each booth. We figured that a few well learned principles were worth more than a load of partially learned details. We finally ended up with 31 well trained instructors. We met with the clergy of the area explaining the plan and asking for the support of their churches — we had the clergy speak on the project and placed lists in their churches for signatures of volunteer hospital workers. Similar lists for signatures were also placed in the post office and business places. The response was remarkable. More newspaper articles were published urging the people to take the first-aid booth courses — appealing to their sense of duty and responsibility to their community and emphasizing the natural disaster possibility. Then the Commercial Club committee divided the area into 12 sectors, over which a captain was placed. Each captain appointed two women in his sector to canvass the area and to prepare a roster of all people who would take the course. The outlying country was turned over to their local organizations to canvass. The leaders of these organizations and the captains of the sectors were then given the number of students they were to supply prior to the starting of each new class. This method of operation insured the filling of classes and avoided overcrowding beyond capacity. The students circulated through the booths under controlled rotation three Monday nights of three hours each in order to complete the course. No examinations were held and no questions were asked of the students. They were free to ask questions and were encouraged to take part in applicatory exercises. At the first conclusion of the three nights they were given a special Civil Defense first-aid card. We felt that mere exposure to the excellent instruction presented in these booths with charts, skeletons, gadgets and other visual aids would definitely make safe first-aiders, especially if exposure was repeated.

The plan was very successful. Several hundred trained first-aiders were produced, a great number of which have expressed the desire to repeat the booths. We felt that the type of training they received was more practical than the usual type of first-aid training and furthermore we felt that we were able to draw in many more people for training than if questions were asked or examinations required. After all, we need thousands of first-aiders knowing a few important principles rendering them safe to carry out practical first aid procedures in connection with helping their neighbors and assisting in medical installations rather than having a few individuals trained in all the details but too few in numbers to be much of a factor in handling the load in case of a mass casualty situation.

I do not claim that the booth method of instruction such as we employed is essential to successfully train sufficient numbers of first-aiders. I do maintain, however, that a practical basic course in which visual training aids are utilized with the exclusion of Lecture type instruction and examinations, and in which a few principles are emphasized rather than details will supply more individuals who can function in Civil Defense emergencies than the routine basic first-aid courses of the past years.

I do not mean to imply that the Red Cross courses that are now being given are not good. On the contrary, they are excellent. The advanced Red Cross first-aid course and the instructors course must by all means be continued for those who can be persuaded to take them. However, the basic course such as I have suggested should be substituted for the present Red Cross standard course in order to insure the training of the masses rather than the elite in a few important principles of first-aid which will be remembered, rather than in details which are soon forgotten.

A course of the type I have mentioned if presented under enthusiastic lay organization sponsorship will attract the multitudes as has been proved by our experience at Moose Lake. There is no justifiable reason for any able bodied person not being enrolled in a course that offers interesting practical instruction with no embarrassing questions being asked or examinations being required.

With a larger number of students taking the basic course, there will be more possible candidates for the advanced courses. Of course these will have to qualify by taking the examination in the basic course. The graduates of the advanced courses will supply the needed instructors and key personnel for the medical installations while those who only finish the basic course will make very satisfactory workers if properly supervised.

Fortunately in Minnesota there is excellent cooperation between the Civil Defense Organization and the Red Cross which is now fully aware of Civil Defense needs. A few months ago the Civil Defense Committee met with the representatives of the Red Cross including their training director for the sixteen mid-western states at which time the deficiencies of the present program were analyzed. There is now full agreement between the two organizations and the Red Cross is now in the process of setting up a ten-hour practical course in first-aid with no examinations in accordance with the desires of the Civil Defense Committee.

It is very difficult to secure effective Civil Defense effort by working with individuals alone since it is almost impossible to establish lines of communication and command function with individuals. It is much easier to carry out plans for organization and training by utilizing to the fullest possible extent the capabilities of existing lay organizations and by keeping in mind that it is better to pick for a key sponsoring agency an organization that has well established channels of communication and command already in operation.

One of the most promising agencies in this category would be the American Legion which has six hundred thirty-two (632) posts throughout this state and already has the desirable chanels of communication and command well established. In addition, to satisfying these demands, the Legion is already committed to the Civil Defense Program by mandate of National and State conventions to assume the responsibility for organizing and maintaining Post Light Duty Rescue Squads for use in the Civil Defense plan.

Since the Light Duty Rescue program requires first-aid training the Red Cross will start out to give the new practical ten-hour basic course whenever desired for this program. It is now the desire of the Civil Defense Committee of the State Medical Society and the State Health Department to have the Legion extend this training in first-aid to every one who can be persuaded to take the course. This would avoid a great deal of duplication of effort on the part of the Civil Defense Organization.

With this thought in mind, representatives of the State Medical Society, Civil Defense Committee, the State Health Department, The Red Cross, and the National Defense Committee of the American Legion convened in joint session in Minneapolis in December. At this time the Legion's National Defense Committee agreed to work for this extension of Legion activity in

First-Aid as desired by the Civil Defense Organization as soon as the Post Light Duty Rescue Squad program is well under way.

The agreement was given with the understanding that the State Civil Defense Organization would provide all instructions in manual form for setting up the courses, providing publicity and securing the students along with the understanding that the Red Cross would furnish the instruction in first-aid. It was also understood that the Legion in sponsoring the first-aid training for the masses would retain control of the program but would seek help from all other organizations in their areas to provide general interest and necessary working personnel. Furthermore, the Legion committee was assured that under the State plan in which the Medical Societies have assumed responsibility for organization and training in Medical installations they would, without question, have the wholehearted assistance of the medical men of all communities.

We are now hopeful that there will not be much delay in getting this first-aid program for the masses under way. Of course, this does not relieve the Civil Defense committees of the County Medical Societies of their responsibilities to see that all phases of our medical training program are carried out throughout the areas under their jurisdiction. Our doctors must help develop interest in their communities and provide the stimulus for getting the Legion Posts of their areas working on plans to set in motion this plan of training. We, ourselves are at fault for the most part for the sluggishness in the development of the first-aid program throughout the State. We, at least can realize the advantages of pretraining in case of disaster and so far have not fulfilled our obligation to the country.

In addition to first-aid training for the masses it is essential that large numbers of individuals continue with advanced first-aid training and also take courses in simple hospital procedures. Otherwise, as was stated before we would be unable to man the hospitals and other medical installations in case of mass disaster.

FIRST-AID AND HOSPITAL PROCEDURES

This problem was also successfully worked out with a pilot training program set up by the nursing staff of the Moose Lake State Hospital. This course was carried out in the same manner as the practical first-aid course in Moose Lake by the booth or station method. Each station was set up to include all materials and apparatus to be used in each procedure. Demonstrations and active participation on the part of students was then carried on in small groups for close working relationship. The interest shown by those participating indicated clearly that simple practical instruction in fundamental hospital procedures to a large number of lay personnel would add a great deal to the defense effort by providing the necessary personnel to work under the relatively few nurses that would be available in case of a mass casualty situation.

The pilot course in hospital procedures developed at Moose Lake included stations covering the following subjects: Sterile technique, preparation of dressings and equipment for sterilization, autoclaving, application of dressings, pre and post operative care, catheterization, oxygen therapy, suction, lavage, hypo technique, setting up for parental fluid administration, giving enemas, taking pulse, temperature, respiration, and blood pressure, charting, recording, handling of shock and hemorrhage, bathing, giving nourishment, and other activities connected with patient care.

In summary — the following high points in the program for training lay people for use in casualty care are to be emphasized:

1. Thousands of lay individuals pre-trained in principles of first-aid and simple hospital procedures will be needed to help staff our medical installations in case of mass disaster due to the contemplated shortage of medical and para medical personnel.

2. There must be uniformity in all training program activities for medical needs with absolute control of these activities by the civil defense organization working through the state and county medical societies.

3. The county medical societies have assumed the responsibility for the organization and training in all medical installations of the areas under their jurisdiction. Therefore, it is the duty of the Civil Defense committees of the County Medical Societies to carry the training plans of the Civil Defense organization down to the grass

roots stimulating activity there by arousing the interest of the County, and municipal medical chiefs, the county and municipal Civil Defense directors and a sponsoring agency to insure pretraining in first-aid for everyone and hospital procedures for many.

4. In order to avoid the difficulties to be encountered in trying to establish a chain of command control and channels of communication while working with individuals it was thought best to request a sponsoring agency already having these features to set up the first-aid program for the masses.

5. Fortunately the American Legion with six hundred thirty-two posts throughout the state and with well established channels of communication and command is already committed to the Civil Defense program and through their National Defense committee have volunteered to help out in the program for instructing the masses in first-aid.

6. The Civil Defense organization will supply the Legion with a manual for setting up the classes, obtaining publicity, and securing the students and the Red Cross will provide a new practical basic ten-hour course in first-aid along the lines advocated by the Civil Defense committee with a maximum use of visual aids, a minimum of lecturing, more attention given to principles than to details, and with no examinations.

7. Finally the most important point to be considered is the question of obtaining the whole hearted participation of the doctors of the state in the project. Personally, I believe that we shall get their full support now that we have definite plans under which they can operate efficiently in their areas to reach the required goal.

MINNESOTA CIVIL DEFENSE AND DISASTER BLOOD PROGRAM

Large supplies of whole blood are indispensable to the treatment of casualties after any type of bombing, explosion or natural disaster. From this need arises most complex problems, because blood cannot be stored for more than three weeks.

In order to circumvent problems of making available fresh whole blood, a four-point plan was developed.

1. Disposable blood-collecting containers, donor and recipient sets of the disposable type are stockpiled in hospitals, blood banks or blood-collecting centers. A rotation plan ensures that the oldest items are constantly being replaced with fresh items.

2. Donor lists are enlarged by increasing the number of persons being typed.

3. A reservoir of trained personnel to draw and process blood in an emergency, providing refresher training for blood technicians is planned.

4. A major aim of the program is the establishment of a central registry showing the number of blood-collecting containers, donor and recipient sets, donors according to blood group, and personnel available for collecting and processing blood.

The program does not interfere with the independence or operations of the hospitals, blood banks or blood-collecting centers. It helps communities to develop a system of mutual aid in supplying blood when such will be required in large quantities.

Two areas remain to be developed in this total program. One concerns the transportation of blood and the other the training of a reservoir of personnel to collect blood.

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CIVIL DEFENSE

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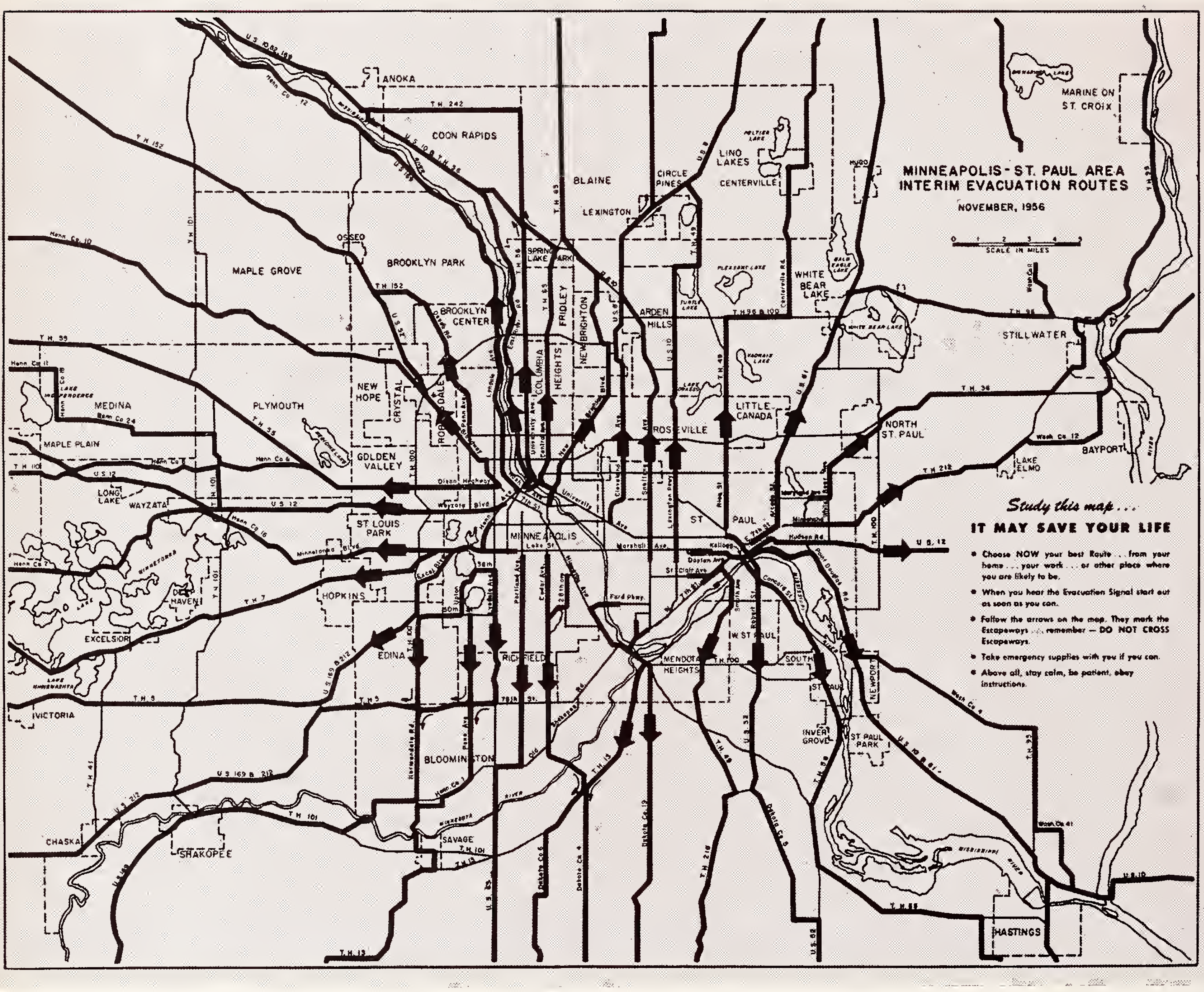

ANOKA
COON RAPIDS
BLAINE
LEXINGTON
CIRCLE PINES
LINO LAKES
CENTERVILLE
MARINE ON ST. CROIX
OSSEO
MAPLE GROVE
BROOKLYN PARK
SPRING LAKE PARK
FRIDLEY
BROOKLYN CENTER
COLUMBIA HEIGHTS
NEW BRIGHTON
ARDEN HILLS
WHITE BEAR LAKE
STILLWATER
MEDINA
PLYMOUTH
NEW HOPE
CRYSTAL
ROBBINSDALE
ROSEVILLE
LITTLE CANADA
NORTH ST. PAUL
BAYPORT
LAKE ELMO
MAPLE PLAIN
LONG LAKE
WAYZATA
GOLDEN VALLEY
ST LOUIS PARK
MINNEAPOLIS
ST PAUL
DEEPHAVEN
HOPKINS
EXCELSIOR
EDINA
RICHFIELD
MENDOTA HEIGHTS
W ST PAUL
SOUTH ST PAUL
NEWPORT
VICTORIA
BLOOMINGTON
INVER GROVE
ST PAUL PARK
CHASKA
SHAKOPEE
SAVAGE
HASTINGS
0 1 2 3 4 5
SCALE IN MILES

MINNEAPOLIS - ST. PAUL AREA
INTERIM EVACUATION ROUTES

NOVEMBER, 1956

Study this map . . .

IT MAY SAVE YOUR LIFE

- Choose NOW your best Route . . . from your home . . . your work . . . or other place where you are likely to be.
- When you hear the Evacuation Signal start out as soon as you can.
- Follow the arrows on the map. They mark the Escapeways . . . remember — DO NOT CROSS Escapeways.
- Take emergency supplies with you if you can.
- Above all, stay calm, be patient, obey instructions.

Hospital Organization for Disasters and evacuation

The hospitals in target area number 2 are progressing in Civil Defense plans . . . Are you helping?

FREDERICK BREINING, COORDINATOR*
Minneapolis, Minnesota

Hospital Civil Defense planning in Minneapolis and suburbs to date has stressed take-cover planning and evacuation-relocation planning. Hospital expansion planning for the most part has been left to the future since it has been felt that local disaster planning would suffice for the present allowing more time for the pressing problems presented by the other two planning efforts.

Minneapolis has designated a full-time Civil Defense Coordinator who is stationed in the Office of the Commissioner of Health (Director, Health and Medical Services of the Minneapolis Office of Civil Defense and Unicom Division 2). The manner in which Civil Defense planning programs have been initiated in Minneapolis and suburban hospitals is as follows:

The Civil Defense Coordinator has contacted the hospital administrator and proposed an eight to nine week planning program. Under this program the hospital administrator appoints a Disaster Committee and designates a chairman.

This Committee is usually composed of the following: The hospital administrator, the assistant administrator or the administrative assistant, the director of nursing, the director of nursing education, representatives from the anesthetists, operating room, central supply, medical surgical (ward), and engineering. Other staff members with a talent for this type of planning are often included. During the first meeting of the hospital Disaster Committee, the Civil Defense representative will outline the proposed

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* Health and Medical Services
Unicom Division 2

Civil Defense planning program. Recommendations include eight or nine week planning sessions of one to two hours each. This time limit has proven to be of considerable importance. Thus the hospital staff members participating in this program know approximately the total amount of time they are expected to spend on the initial planning effort. This also tends to prevent rambling and makes for a well-organized program. Toward the latter part of the planning effort, the remaining department heads of the hospital attend several meetings with the Disaster Committee. At these sessions the Committee considers the problems relating to the specialists groups and decisions are made as to their role in the Civil Defense effort.

When the Disaster Committee has completed its part in the planning effort, the people responsible for the actual writing of the Civil Defense plan will prepare a rough draft which is reviewed by the Committee. This draft will then be presented to the Medical Director and the administrator of the hospital for criticism and final approval.

We feel that the stamp of approval by the Medical Director of the hospital must be placed on each hospital disaster plan and that it will be necessary for the medical staff to understand the implications of the hospital's disaster plan.

Some of the hospitals have deemed it advisable to prepare a condensed version of the hospital disaster plan which has been distributed to the general staff. The unabridged plan has been made available in departmental offices. The hospital Disaster Committee is also charged with the responsibility of making periodic reviews of the hospital's Civil Defense plans, arranging training programs (e.g. radiological monitoring courses), and periodic refresher courses. Civil Defense authorities make themselves available to the Disaster Committee as resource people and periodically review the status of hospital Civil Defense planning with the chairman of the Committee.

Within a reasonable amount of time, after completion of the hospital Civil Defense disaster plan, a general staff orientation program should be presented. Since the administrative and supervisory personnel have all participated in the planning effort, they are well-qualified to carry on an orientation program within their own departments. The initial Civil Defense staff orientation should be carried out by department heads under the direction of the hospital administrator. Periodic in-service Civil Defense orientation programs should be carried out in the same manner. Upon the completion of the initial hospital Civil Defense disaster plans, there should be testing of both the take-cover and the evacuation plans.

All Minneapolis and suburban hospital disaster committees have made at least one coordination trip to their relocation sites. These trips have invariably proved productive. The target area hospital Civil Defense representatives meet with the relocation site Civil Defense people with the express purpose of determining how they can best aid the reception site Medical Civil Defense authorities in the event of a nuclear disaster. Usually both parties are surprised and pleased to learn the status of Civil Defense planning in other areas and are often stimulated to even greater efforts in disaster preparation.

Four Minneapolis and suburban hospitals have made practice evacuation runs to their assigned relocation sites in Minnesota. These hospitals are Northwestern Hospital to St. Peter, St. Mary's Hospital to Mankato, Glenwood Hills Hospital to Paynesville, and Deaconess Hospital to Glencoe. Even though all phases of hospital evacuation planning have been tested, each hospital has placed special emphasis on a particular phase of the evacuation and thus contributed additional information which has proven to be of value in future hospital planning. The target area hospitals involved have moved staff and simulated patients to their assigned relocation sites fifty miles or more from anticipated ground zero.

Each hospital evacuated approximately 20 percent SIMULATED patients. Hospital auxiliary members and student nurses usually became the "patients" for these exercises. The simulated patients were stationed outside the room of the actual patients (e.g. if the patient in the hospital room was a wheelchair patient, the volunteer became a wheelchair patient). As soon as the evacuation alert was sounded, the simulated patients were aided by hospital staff members assigned to this task.

All Minneapolis and suburban hospitals have the Bell and Light Civil Defense Warning System.

Evacuation and/or take-cover warnings would be received over this warning system in the event of an enemy attack. This system is tested every Wednesday.

For the most part transportation for the practice evacuations was provided by hospital personnel whose vehicles were normally parked in the hospital parking lots. Supplementary transportation was provided by the American Red Cross and the United States Post Office. The supplementary transportation, consisting of station wagons and postal trucks, was used to transport the litter patients. Some of the trucks as well as the trunks of passenger cars were also used to move medical supplies.

Generally the hospitals have planned for a two-wave system of evacuation. The "first wave" consisting of all physicians, most of the registered nurses, student nurses (e.g. students in last year of training), some technicians and engineers. Some of the more highly trained aids were often included in this group (e.g. Central Supply personnel). Thus the majority of the most critical personnel left the hospital immediately upon the receipt of the Civil Defense evacuation alert. A minimum staff was left to aid the patients in their evacuation effort. In this way the greater part of the hospital's staff attempted to evacuate in the "first wave" in order to make themselves available at their hospital relocation sites where they were most needed. The patient was not "sacrificed" in this effort because the evacuation continued with the patients and the remaining staff as soon as they reached the evacuation exits.

Various methods for removal of the maximum amount of medical supplies from the target hospital have been planned and tested during the evacuation practice drills. One method has made use of "bucket brigades." Hospital staff members formed lines and passed supplies up steps and down corridors adjacent to the supply storage areas (e.g. Pharmacy, Central Supply, Storeroom, etc.). The supplies were loaded into passenger vehicles or trucks. Several hospitals have demonstrated that a maximum amount of supplies could be moved in this manner with no appreciable slowing down of the evacuating hospital personnel.

During the "take-cover" planning effort, hospitals have had to make decisions concerning evacuation of hospital staff and ambulatory patients to maximum security areas of the hospital and proper disposition of the non-ambulatory patients and staff members remaining with them.

Surveys were made of the hospitals' maximum security areas, food and water supplies, medical supplies, fuel supplies, emergency cooking facilities and emergency sanitary facilities. Some of the other problems considered were supplemental drinking and firefighting water, problems of electricity, heat and ventilation, movement of medical supplies, bedding, etc., to the maximum security areas.

Several hospitals have organized an internal and external security force which would operate in the event of a local disaster or a Civil Defense disaster. The Police Service of the Minneapolis Office of Civil Defense provided instructors for necessary training courses.

Plans are being made by the Twin City Regional Hospital Council, the Medical Service of the Minneapolis Office of Civil Defense, and the Medical Service of St. Paul Civil Defense for a cooperative effort in hospital disaster planning. A committee has been appointed which will work with Civil Defense authorities in formulating prototype hospital disaster plans. It is anticipated that this committee will also study and prepare recommendations regarding hospital training and orientation programs.

This committee will make recommendations regarding all aspects of Twin Cities hospital disaster planning. Our hospitals can thus evaluate their existing Civil Defense plans in light of the recommended standards outlined in the prototype hospital disaster plans.

Individual hospital planning in Minneapolis and suburbs has progressed satisfactorily in the past several years. We have reached a point in our planning program where we can all gain by a cooperative planning effort between the Twin City Regional Hospital Council, the Medical Service of the Minneapolis Office of Civil Defense, and the Medical Service of St. Paul Civil Defense. The result in this planning effort should be more uniform disaster planning and training in the Twin City and suburban hospitals of Unicom Division 1 and Unicom Division 2.

Hospital Assignments for Dentists

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In the A. M. A. Task Force Report on National Emergency Medical Care, dentists are assigned to assist physicians in a major disaster and it is recommended that they should be trained to perform emergency casualty care services. Without training they would be unable to serve effectively in such capacity.

Recognizing the need for training, courses of instruction have been given to dentists in all parts of this country; in dental societies and dental schools; in OCDM training classes; and in the Army and Navy Training Courses. In this manner thousands of dentists have had some indoctrination in lifesaving measures and casualty care techniques. This program has been fostered, over a period of nine years, by the FCDA and the OCDM, the A. D.A. and many members of the medical profession who have acted as instructors. Recently a marked recession has been noted due largely to the lack of recognition or proper assignment of those who have taken these courses of instruction. Dentists are unwilling to engage in training courses without some definite objective or plan of implementation of their services in a major disaster.

Dr. Carruth Wagner of the U. S. Public Health Service in an address before the Second A. D. A. Civil Defense Conference in Los Angeles emphasized the need for training programs for dentists but stated that "training, to be effective, must be orientated toward a *specific assignment for each dentist* . . . baseline health mobilization training is not an end to itself."

Dentists are willing to prepare themselves for assigned duties in civil defense but they cannot assign themselves to medical teams or integrate themselves in any medical disaster program. This can only be done by the medical profession.

The most logical assignment for dentists is to local hospital disaster groups. They, with other allied medical personnel, should function in all hospital disaster plans in their communities. There they should be trained and their role rehearsed with other professional teams. Such assignments would afford incentives for dentists to train and would provide continuous interest and cooperation in disaster preparedness.

Many hospitals, in various parts of the country, have included dentists in their disaster programs. They have conducted classes of instruction and have afforded dentists and dental students opportunity to observe casualty care in hospital emergency rooms. This is a most effective method of training.

If properly administered, the possible dangers of criticism or legal complications are too remote to deny so valuable a form of training. Unless dentists can actually observe emergency care of traumatic injuries, didactic teaching is not too effective.

If medicine means what it has said, that dentists be trained to assist in major disasters, a means should be provided for its accomplishment. Hospitals in each community are the focal points of emergency medical care. In their civil defense planning, hospitals should be urged to assign local dentists (in addition to their oral surgeons and hospital dentists) to their disaster programs — to afford them casualty care training and actual observation of the treatment of accident cases; to familiarize them with hospital procedures; and to assign them specific duties in the medical care of emergencies, if and when they may be needed.

This is the next step in dental civil defense preparedness.

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Biological warfare can be disastrous for humans through serious effects on livestock herds. The author discusses the problem of education and training to meet this threat.

Biological Warfare and the Livestock Industry

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The prevalence of animal disease can seriously affect the livestock industry of a country. Failure to develop and maintain effective disease control and disease eradication measures could lead to heavy losses in this important industry which would contribute to higher production costs with a resultant adverse effect on the nation's economy. The presence of animal disease, resulting in restrictive quarantines, would have an untoward effect upon our agricultural commerce.

This country has preferred to eradicate serious animal diseases, whenever possible, rather than to live with them as do some of the foreign countries. This preference has definitely contributed towards our higher standard of living and our high economic status. We have also chosen to keep out foreign animal diseases by means of strict inspection and quarantine methods and by prohibiting the importation of animals from countries unless they are thoroughly sprayed with insecticides if they come from countries in which disease infected insects may have gotten abroad.

Highly communicable diseases could spread rapidly through the livestock population of this country, due to the wide movement of livestock in our present marketing practices and the rapidity of this movement. Furthermore, our animal population is highly susceptible to foreign animal diseases, due to the fact that our livestock have not been exposed to these diseases, with a resultant lack of immunity.

Plans have been made and a system for the prompt reporting of animal diseases developed and put into effect. The sooner a disease outbreak is recognized, the quicker suitable control and eradication measures can be put into effect. When a foreign disease is recognized or suspected of being present, the first step is prompt reporting of the disease to the state and federal regulatory officials. The next step is the establishment of the necessary quarantines to limit the spread of the disease by controlling the movement of infected or exposed livestock. These quarantines remain in effect until the disease has been controlled or eradicated. At the same time, investigations are made to determine the source of the infection and the extent to which it has spread. If total eradication is not practical or economically feasible, it may be necessary to resort to vaccination of all susceptible animals; however, this does not eliminate the causative agent.

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The introduction of animal diseases as an offensive weapon can create many problems to complicate control and eradication efforts. The animal host, disease, time and place of the outbreak can be selected to increase the difficulties of control and eradication. Several agents of similar diseases can be used simultaneously to confuse diagnosis. Unfortunately, a number of diseases present similar symptoms. Furthermore, the introduction of more than one agent might produce more than one disease in an individual, with contradictory symptoms and varying incubation periods.[4]

It is quite obvious that our agricultural economy and the food supply of the nation could be upset by biological warfare, and this possibility is ever present with its grim possibilities. We must face up to this possibility and take immediate decisive steps in the preparations for such an eventuality. Biological warfare, with its use of various biological agents, is very feasible as an offensive weapon. Its possibilities in a single offensive effort cover a far greater geographical area than any other offensive weapon. This country has spent millions of dollars to control and eradicate certain animal diseases. A single attack, utilizing biological agents, could conceivably make our previous efforts to no avail.

We should bear in mind that biological warfare as applied to livestock is actually "anti-food warfare," and during war, the importance of food needs no further emphasis. In all wars in the past, military efforts have been devoted to the reduction of the enemy's food supply, and these efforts could be the deciding factor in a major conflict of long duration. [1]Unwilling as we may be, we must bring ourselves to face the possible threat of the introduction of foreign diseases in both our human and animal population. Unlike other offensive weapons, a very minute exposure of the individual to biological agents may be enough to cause death or disability.

One of the chief advantages of biological agents as an offensive weapon is the ability to affect very extensive areas and great numbers of individuals. It only follows that it would take great numbers of the defensive population to care for the affected individuals, whether human or animal. Another advantage of biological agents as offensive weapons is that these agents can be used by relatively small nations with limited financial resources and limited industrial installations.[2] The use of biological agents also makes it extremely difficult to identify the responsible powers. The materials can be spread with very little chance of detection as to source.

Fortunately the use of biological agents is limited due to the fact that relatively few microorganisms are suitable for this purpose. Dr. L. D. Fothergill listed certain criteria for suitable organisms in his presentation of September 21st, 1960 at the ninth U. S. Civil Defense Council Conference. [1]These criteria are as follows:

1. The agent must be highly infectious.
2. The agent must have sufficient viability and and virulence stability to meet minimal logistic requirements.
3. The agent must be capable of being produced on a militarily significant scale.
4. The agent should not be unduly injured by dissemination in the field and must have a minimum decay rate in the aerosol state.
5. There should be a minimal immunity in the target population.

There are many foreign diseases that have never been introduced into our animal population or that have already been eradicated. African Swine Fever, caused by a filterable virus, closely resembles Hog Cholera, but attempts at immunizing swine against this virus have been for the most part unsuccessful. Contagious Bovine Pleuro-pneumonia was eradicted from the United

States in 1892 and has not reoccurred since that time. Rinderpest or Cattle Plague is a highly contagious and fatal disease of ruminants. Rift Valley Fever or Enzootic Hepatitis is an acute infectious disease of sheep, cattle, and other animals, caused by a virus. It is highly communicable to man and assumes an influenza-like form that is rarely fatal, but serious sequelae such as thrombophlebitis, serous retinopathy, affecting the macula, and at times retinal detachment, may result. Foot and Mouth Disease has appeared in the United States on occasion and has always been eradicated. [4]We must bear in mind, however, that it is one thing to eradicate an animal disease when funds and manpower are available. It would be quite different in times of stress, such as during a national emergency.

Diagnosis of foreign animal diseases is complicated further by the fact that many veterinarians have never seen actual cases and would have only a reading knowledge of such diseases. The abnormal routes of exposure and possible unusually heavy exposure resulting from the use of biological agents may produce unusual manifestations or unusually severe cases.

It is not necessary that 100% of the animals be affected for an attack to be effective. If large numbers of animals are affected, it would require large numbers of veterinarians and lay personnel to care for them. This would also require additional supplies of drugs over and above the amount normally consumed.[3]

It becomes obvious that the possibility of biological warfare requires adequate preparation well in advance. We have effective vaccines against many of the biological agents which may be used, and additional vaccines can and will be produced, but this takes time. Most urgently needed is further research designed to develop early detection and warning devices for biological warfare agents. There is need for early recognition and identification of the clinical disease produced by one or a combination of these agents.[2]

Biological immunity is a defensive measure, but an enemy would certainly try to utilize agents against which we were known not to have an effective vaccine. Even with known effective vaccines, the U. S. population does not use them to the fullest advantage on humans or on animals. During time of biological warfare mass immunization procedures would be followed, but even then a certain percentage of the population would no doubt, be reluctant to participate. This reluctance to participate is borne out by the number of persons that have not been vaccinated against polio or that have had less than the suggested number of doses for maximum protection. The use of presently available antibiotics for prevention over long periods of time would be impractical and possibly dangerous. Furthermore, the available supply would no doubt be needed for the treatment of clinical cases.

It is imperative that a suitable training program be made available and that all medical personnel be trained in the various phases of anti-biological warfare. At the present time, we would be virtually helpless should biological warfare be waged against us.

It is important that we continue to expand our medical research programs in these areas. Large amounts of vaccines, antibiotics, and chemotherapeutic agents should be stockpiled, and research must be devoted to ways in which to prolong the present effective life of these products.[1]

Our defense against the introduction of animal diseases must be all-inclusive. It would be disastrous to have a good defense against certain diseases only to have an enemy use a type of biological agent against which we have no defense.

Summary

Biological warfare is a definite threat to the livestock industry and food supply of our nation. Preparations must be made in advance to promptly recognize and take immediate steps against such disease introduction.

Biological warfare as applied to the livestock of a nation is actually "anti-food warfare," which in time of war needs no further emphasis.

Further training and research in this field is of vital importance if we are to be adequately prepared to take effective steps towards combating the introduction of such diseases.

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MINNESOTA CIVIL DEFENSE HOSPITAL ORGANIZATION FOR DISASTERS IN NON-TARGET AREAS

In the event of a thermonuclear attack in Minnesota, it will become the task of the non-target areas to provide medical care for survivors from the target areas.

It is assumed that prime target areas in Minnesota will be the metropolitan areas of Minneapolis-St. Paul and Duluth-Superior. An accurately placed 20-megaton missile could destroy Minneapolis and St. Paul, eliminating half of Minnesota's physicians, nurses and other health personnel, sixty per cent or more of the state's medical supplies and equipment, plus the loss of 10,000 hospital beds.

The care of mass casualties must be assumed by medical resources in the areas outside target cities, and concentration of planning efforts must be undertaken in outlying communities.

It is believed that we will have a maximum patient load of some 200,000 medically treatable casualties if a catastrophe occurs. There are 20,000 hospital beds in 150 hospitals in supporting areas. Thus, the non-target supporting area hospitals have been given the mission of expanding their present hospital facilities ten-fold.

Existing community hospitals and state mental hospitals will serve as nuclei for hospital expansion plans. Expansion will be carried out by improvised use of schools, convalescent homes, college dormitories or other adaptable public or private buildings.

Mental hospitals would become emergency treatment hospital facilities. Approximately 75% of the existing patient load of mental hospitals would be released.

One aspect of catastrophe care that varies most from normal peacetime care is the sorting of mass casualties. Sorting should be done by the most mature surgeon or general practitioner with surgical experience available in order to conserve professional personnel and supplies for the care of casualties whose recovery may be anticipated.

A priority system for medical and surgical care has been developed from the experiences of recent wars, modified by assumed conditions of nuclear warfare. The injured will be divided into four groups:

1. Casualties requiring minimal treatment.
2. Casualties requiring immediate care.
3. Casualties whose surgical treatment may be delayed without immediate jeopardy to life.
4. Casualties whose therapy will be expectant.

Group four casualties, while considered as expectant and in general, hopeless, will not be neglected but will receive treatment if they reach civil defense hospitals and providing facilities, personnel, equipment and supplies are available. This is contrary to the accepted civilian concept that the most severely injured are given the highest priority. It must be accepted that priority care must be based on the greatest good to the greatest number. The lengthy surgical procedures and the other measures required for one expectant casualty would jeopardize the lives of several casualties in other priority groups. Increased loss of life must be accepted in this group.

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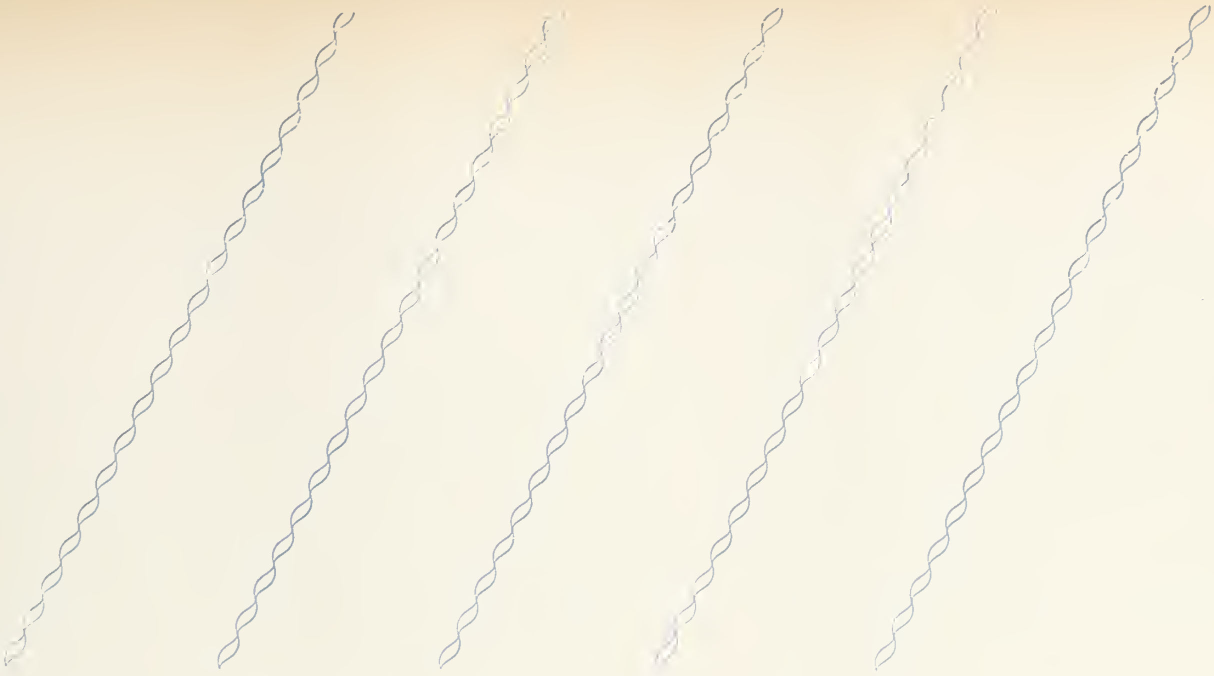
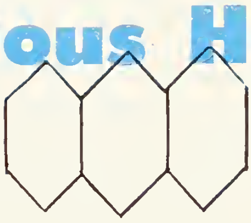


CHEMICAL WARFARE

another Serious Hazard



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In our attempts to provide a civilian defense which would be adequate to insure national survival against the type of attack we might expect in event of a "total" war, our major concern has been protection from nuclear weapons. While this appears to be a reasonable approach, we cannot ignore the possibility of an attack involving the use of chemical weapons. The war gases that have been developed in the past twenty years have the potentiality of becoming very effective weapons; and the worldwide destructive effects of the large nuclear devices may actually make these weapons unsuitable for extensive use, since they may well render the world uninhabitable for victor and vanquished alike.

It must be remembered, too, that while the production of nuclear weapons requires a rather advanced technology, as well as a source of fissionable material, chemical weapons are relatively easy to produce, and, in general, raw materials present no problems. Certainly any country with the ability to deliver this type of weapon over enemy territory would be able to provide itself with adequate supplies of any formulation it chose to use.

Of the various chemicals used in warfare, the ones that concern us most in civil defense are the recently developed nerve gases which act by blocking the normal action of the enzyme, cholinesterase. These gases are lethal in a very short time and in small concentrations unless effective counter measures can be taken. While research is in progress which may lead to the development of gases having other properties, the nerve gases are here now and are available in quantity. The older gases, such as the mustards, are also readily available, but extensive use of such chemicals does not appear likely. The need to use the most effective weapon available seems to dictate the use of the nerve gas; and our thinking in terms of defense must follow the same reasoning.

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In planning a defense against the threat of chemical warfare, civil defense officials are confronted with certain specific problems. The following classification of these problems is arbitrary but may serve to promote an orderly discussion.

In the first place, it is necessary to detect the presence of the chemical warfare agent before it has a chance of becoming totally effective. The older war gases could be detected and identified by chemical tests, and they also gave an early warning because they usually had a distinctive odor. It is worth noting that the human nose is a very sensitive device and will detect extremely small concentrations of many airborne chemicals. Unfortunately, the newer nerve gases are both odorless and invisible. Simple kits are available which can detect the presence of these chemicals at levels where they become dangerous. This method of detection suffers some serious limitations. At best, it requires a minute or so to make a test, and longer than that if the person doing the testing has not had some practice or is caught unawares. A minute or two of exposure to high concentrations of a nerve gas may well prove fatal. Too, the ability to test for gases is obviously limited to those persons having the necessary kits or equipment. While continuous monitoring systems could be devised, these systems can still only provide information about the area in which they are located; and they are quite expensive to build and maintain. Unless they are battery powered, electrical failure coming as a result of a high explosive attack would put them out of action. In the Minnesota plan, those persons trained to monitor radioactivity levels are also being trained to detect chemical warfare agents. It should be noted that if chemical warfare agents are detected in any area, by whatever system used, all areas under attack should be suspected of contamination until complete examination has established the absence of gas.

The problem of protecting the general population after gas has been discovered is far from being solved. There are, of course, some general principles of protection which can be pointed out; but the actual mechanics necessary to convert principles into action are, for the most part, lacking.

The most elementary way to protect oneself from a gas attack is, obviously, not to be there when it happens. Plans for pre-attack evacuations of population centers have been worked out to provide this type of protection. However, even the most optimistic exponent of these plans must have occasional qualms as he observes rush-hour traffic; and plans for evacuation are always supplemented by plans for protective shelter. On an individual basis, gas masks can provide a certain amount of protection; but they must be supplemented by protective clothing which leaves no skin area exposed. The latest nerve gases can be dispersed as minute droplets, and they may enter the bloodstream through skin absorption as well as by inhalation. While masks and protective clothing may be suitable for persons trained and skilled in their use, and who are required to move from place to place to perform civil defense functions, they do not seem to be the answer for the general public. Certainly such masks and clothing are not available to the public in any quantity at this time.

The ordinary bomb shelter area can protect against gas attack with the addition of the proper filtration system to ventilation apparatus. Practical units are available for the large size shelters which require power to operate the ventilation systems. As yet, no hand operated air pumping and filtering apparatus is available for use with family size shelters. However, this type of equipment may be developed in the near future.

The problem of taking care of casualties from a gas attack must also be considered. It is apparent that, in view of the small number of medically trained people who might reasonably be expected to be available in an area of attack, and in view of the necessity for quick action, the immediate problem is one of providing adequate first aid. This would include getting the victim away from exposure to the gas, removing any droplets that might be penetrating through the skin, giving artificial respiration, and, possibly, administering atropine. It is interesting to note that at the present time atropine is the only known counter agent, suitable for injection, that is used against nerve gas; and according to Dr. Charles W. Steele, speaking before the Ninth Annual U. S. Civil Defense Council Conference at Minneapolis in September, 1960, if all the atropine available to civil defense authorities were distributed among physicians, each physician would have about six doses, or less than the amount needed for one severe case of poisoning. One of our present needs is a stepped-up search for new chemicals which can be used to combat the effects of the nerve gases, and the provision of an adequate supply of such chemicals for emergency use.

Finally, there will be problems of decontamination. Procedures will vary, depending on the physical nature of both the contaminant and the material contaminated. Both victims and workers who have been exposed to war gases will need to be decontaminated. Water, if available, combined with alkaline detergents, is probably the best all around medium for cleaning. If the gas used is a true gas or evaporates readily, it will diffuse into the air rapidly, and concentrations in any area will diminish quickly. If the gas is actually a liquid, it may be flushed away with water and a detergent, even though it probably would not be soluble.

Contaminated supplies and equipment can be allowed to weather for several days, if they are not needed immediately. Even if the weathering process does not remove all the contamination it will make the final clean-up easier and much less dangerous.

It is apparent that this brief discussion of civil defense against chemical warfare agents has pointed out many more problems than solutions. If we seriously believe that chemical warfare is a logical possibility in the foreseeable future, it would seem that more effort must be spent in providing ways to cope with such a disaster. This effort must be expended in research to find agents to counteract the effects of the chemicals used as weapons; in improved organization to make the best use of what we have; and in informing the public of the true magnitude of the problem in order that they, too, become aware of the necessity for an expanded program in the defense against attack with chemical agents.

THE CARPAL TUNNEL SYNDROME

This syndrome consists of a stenosis of the carpal tendon sheath and compression of the median nerve causing acroparasthesia and atrophy of thenar muscles. The symptoms consist of numbness, tingling, painfulness and burning in the fingers. Stenosis of the carpal tunnel may be associated with local trauma, gout, rheumatoid arthritis, multiple myeloma, myxedema, amyloid disease and acromegaly. When the wrist is sharply flexed for sixty seconds, symptoms referable to the median nerve suggest the diagnosis.

Robert H. Durham

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A man is very apt to complain of the ingratitude of those who have risen far above him.—*Samuel Johnson*

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SILO FILLER'S SYNDROME

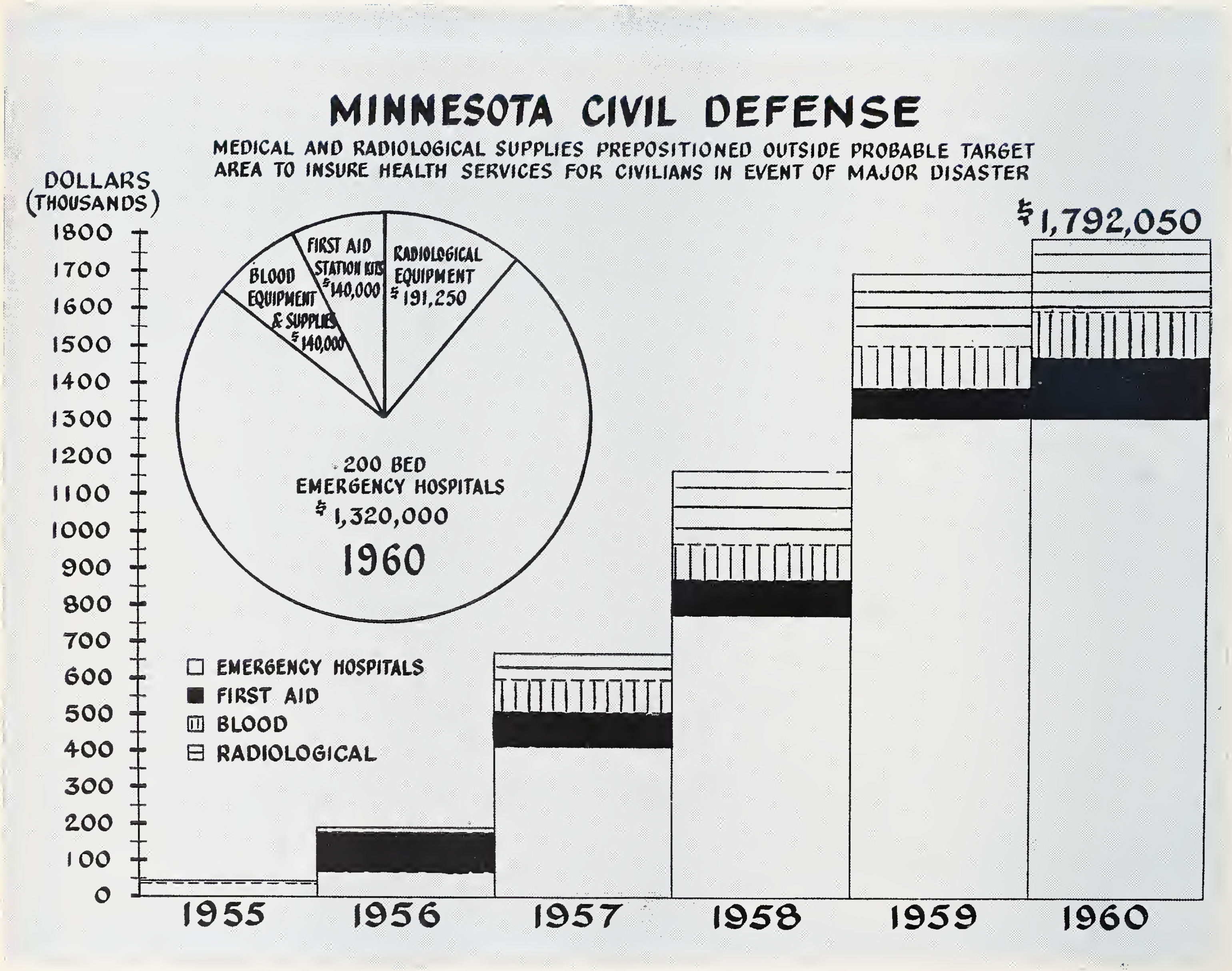
This is an incapacitating respiratory infection occurring in farmers who have been chronically exposed to moldy forage. The initial symptoms consist of headache, malaise, dyspnoea, cough, fever, chills and hemoptysis. Silo filler's syndrome, occurring after inhaling the fumes of nitrogen dioxide, is somewhat different from the symptoms caused by moldy dust.

Robert H. Durham

Concepts of

Medical Supply Assessment

> If an attack comes . . . where will we get drugs? Will national stockpiles be available? . . . Will drug companies have reserve supplies on hand? . . . What is *my* responsibility in drug supply?



in Terms of Disaster Preparedness

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This article deals with certain objective planning aspects of medical supply-demand relationships which are necessary to cope with conditions resulting from a nuclear attack on this country. The presentation aims to avoid the controversy inherent in a purely "crusading" approach, yet present philosophic reasoning designed to stimulate action by conservative and progressive thinkers.

To inaugurate a thought pattern, here is an elementary example: Suppose that, at the beginning of your work day tomorrow morning, you received a message specifically directed to all physicians: "Enemy attack of significant magnitude expected momentarily. Follow the instructions of your standby emergency civil defense plan. Conserve all medical supplies — no replenishment of local inventories to be expected for an indefinite period. Take immediate precautions to protect your life during the actual attack. Follow your standby plan and be prepared to assume your emergency medical care responsibilities. This is a National emergency!"

Needless to say, the thought of such an announcement is not only blood chilling, but immediately provokes several reactions.

First, what and where is this standby civil defense plan you are supposed to follow? Second, this is the day you usually restock your emergency bag and office supplies. Better call the pharmacy — no, better call home — no, better run for the basement in the building — must be safer than this ninth floor — no, better go home — your wife and children are most important at a time like this!

Regardless of your ultimate course of action, would it not be considerably better if some thought had been given to the subject during a period of less stress? For instance, RIGHT NOW.

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What preparedness measures make sense to you? To what extent do you wish to influence these measures, if any? Is the fatalistic approach reasonable? After all, from some reports you have read, there may not be too much left with which to be concerned. Besides, your name may be on that first bomb, so why be concerned? Do you honestly have any civil defense obligations?

If a very conservative approach is used, the basic elements for individual survival are food, clothing and shelter, elements which are truly survival matters for some segments of the world's present population. Are you willing to limit your planning to support measures to assure that these basic essential needs are available for you and your family under emergency conditions? Or, as a member of the medical profession, do you wish to expand your support to include an important segment of civil defense planning — the medical supply aspects of emergency medical care?

The need for any commodity or service can be related to the essential requirements of a nation based on its position on the standard of living index, and the desire of the planning and preparedness bodies to retain this standard of living under adverse conditions. In other words, post-attack medical care capability can be determined only through analysis of the type of medical care planned to be afforded in relation to the amount of supplies, manpower and facilities which can be made available to accomplish the desired medical care capability. How can this analysis be accomplished so that useful data can be developed for planning purposes?

Of the thousands of medical supply items currently used in modern medical practice, which ones can be eliminated and still not seriously jeopardize the national health? Is it possible, under the terms of modern medical practice, to eliminate any item which presently contributes to the preservation of life and productivity of the individual? Is it not possible, within the probable structure of our surviving economy to set forth preparedness measures now which would assure the availability of all currently used medical supply items? Experience has shown that the desires of the population, as expressed through the results of legislative processes, do not include funds in the amounts needed to assure such availability, and, therefore, a compromise is necessary if practical preparedness measures are to be carried out.

In an attempt to outline a simplified procedure to develop a cognizance of the minimum facts and figures needed to make useful estimates and identify supply problems in the area of civil defense medical care, it may be well to follow a logical sequence of preparatory actions.

First, as you go about your daily practice, what medications, instruments and equipment items are absolutely essential for patient care? If you were forced to make a selection of just those items considered essential for life saving and maintenance of health of your patients — which items would you choose? Why is such a choice necessary; is it not possible to plan for the availability of the materials you regularly use? Yes, if you are willing to stock 6 months to a year's supply (you and your colleagues, or, in lieu thereof, your respective supply points) of those items needed generally for your usual patient load, and in addition, sufficient amounts to cover the quantities of supplies required to handle your pro rata share of the sick and injured resulting from a nuclear attack.

Supplies from manufacturers' production cannot be counted on for several months post-attack. Supplies from normal inventories will be limited primarily because good commercial business practice does not allow accumulation of excess inventory. National inventory losses due to bomb damage and the concurrent high demands for supplies may create a serious disparity between need and availability. If one desires to stock reserves, it appears logical, in view of the costs involved, to stock just those items considered absolutely essential for patient care rather than numerous items which are "nice to have" but more "peripheral" in nature.

Assuming that a choice of items is made, what would be the next step towards developing a civil defense medical care plan in terms of medical supply? Would it not be well to identify a total requirement figure for these items for a particular time period which a plan is to cover?

Requirements can be developed only if reasonable estimates of probable workload can be deducted. Is your community on the periphery of a target city? Are you located in an area which can be assumed remote from the effects of direct attack? Are you in a critical target area? Is your community designated as a reception center for refugees or strategically relocated segments of the population of your state or nearby states? Answers to these questions are sometimes common sense deductions, but usually are found in State and local civil defense planning documents.

Once an element of potential workload can be estimated, the difficult task is to determine the needs of your community for a specified time period for the population count involved — a population composed of individuals with typical peacetime illnesses and conditions as well as those suffering from the direct effects of the attack. The public health problems associated with a high influx of population into your area may further confound estimated needs. Estimates can be made though, and must be, before useful plans can be developed. It may be necessary to set up a series of assumptions to serve as a base guide. Do this in terms of your State Civil Defense Plan, and refine them in accordance with local plan, if it exists. Develop both per capita and total requirement for each item thought absolutely necessary for patient care. Through a coordinated effort with your colleagues in various medical specialties, an exceedingly useful set of "requirement factors" can be developed for the geographic area of your interest.

If your dedication has persisted through the first two principal phases of planning, namely identification of essential medical care items and development of total requirements, one more step is mandatory before fundamental operational aspects of an emergency medical care plan can be considered. The final and a most important step — what quantities of the selected essential medical items may be available to your community from all sources?

Obviously, attention would be directed towards normal supply points such as retail pharmacies, wholesale drug houses, surgical supply dealers, and producer points. To further expand the coverage of inventory holdings, the chain drug store warehouses, the drug rack suppliers for food stores (including actual stocks on drug racks), your own office stocks, hospital stocks, department and variety store "medicine cabinet" specialties, and maybe the householders' stocks may all add up to a significant and readily available inventory in your community. Depending on the degree of accuracy desired, a suitably prepared questionnaire can be sent to a representative sample or to all of the various inventory points to be covered within community boundaries. Performance of surveys of this type is usually not difficult if professional and trade associations, and civic leaders are solicited in cooperation with state and local civil defense offices.

Once the information relating to the three basic elements is accumulated — 1) identification of essential medical care items; 2) development of estimated per capita and total requirements for each of those medical items considered essential for a specified time period, and 3) inventories of those same essential items which may be available for community use — it is possible to arrive at very useful planning indices which include: the number of patients which can be cared for in your community within the limitation of supply, identification of those items which will very likely be in short supply, a guide for redistribution of supplies to consuming points to accomplish the most effective balance of products in terms of treatment whether it be related to first aid stations, improvised treatment centers in refugee groups, or hospital type medical care centers.

What does this information lead to and what will have been accomplished in relationship to Federal plans?

The Federal government, in an attempt to initiate and develop programs which are reasonable and consistent with national wishes as related to a post-attack medical care program, has taken several steps. A medical stockpile was created over the past few years which now has a total value of about 200 million dollars. Within this amount is included 1932, 200-bed emergency civil defense hospitals. In addition, federal matching funds have and are being made available to the States to procure civil defense material including medical items. Many States have within their own right acquired emergency standby supplies. Surplus Government property also is made available to states for civil defense purposes. Continuing studies at the Federal level constantly re-appraise stockpile needs. Recently completed

national surveys have revealed heretofore unknown information regarding potential serious shortages of medical items. It was discovered that about ¾ of a billion dollars worth of survival type medical supplies occur as normal inventory (government procurement cost). A typical large scale attack reduces this inventory, on a national basis, to about one-third of the pre-attack level. Estimates of the dollar value of sufficient medical supplies to cover a six months' post-attack AUSTERE medical care program (including casualty care) amounts to about 1 billion dollars. Including the present medical stockpile and post-attack remaining inventories as assets, some $500,000,000 is still needed for stockpile purposes if we are to assure minimum medical supply needs.

A weakness in the development of a stockpile program is distribution. National studies identify deficiencies and surpluses on a national basis, but individual community supply problems are exceedingly difficult to identify. Unless positive action is taken at the local level, which will furnish an indication of potential shortages, Federal stockpile programs can only approximate geographic deficiencies to the extent of the availability of appropriated funds.

State civil defense directors have access to most of the data collected so far by the Federal government. The Regional Offices of the Department of Health, Education, and Welfare, the contact point for State Civil Defense Directors, have been furnished with a State by State breakdown of normally occurring inventories. This information, though lacking in community detail, offers an element which is useful for broad planning. In addition, Federal concepts of a list of essential medical survival items and estimated per capita requirements for each item are available if serious pursuit of local planning is anticipated.

The recent issue of the National Plan for Civil Defense and Defense Mobilization, which was promulgated by the President, initiated a series of planning documents which are useful in the coordination of Federal, Regional, State and local plans. As part of the National Plan, some 40 annexes cover the emergency aspects of the total economy. A series of appendices is now being developed which will serve as a general guideline at the local level. Annex 18, the National Health Plan is now available through State Civil Defense Directors.

The points covered in this article are consistent with the above planning documents and will appear as a portion of the concepts in a resource management appendix to the National Health Plan.

It is only through efforts at the local level that the Federal government can hope to fulfill its emergency medical care obligations. This presentation attempts to show a parallelism between suggested action at the community level and actions now taking place at the National level.

LAUGHING DEATH SYNDROME (Kuru)

This is a new syndrome described in 1957, observed principally in New Guinea where it occurred in endemic form. The syndrome resembles the degenerative lesions of the basal ganglion with a marked increase in the alpha and beta globulin. The disorder is actively progressive with increasing tremor, progressive weakness, frequent uproarious and hilarious laughter which may become continuous. Death usually occurs within six months.

Robert H. Durham

Minnesota

The Medical Profession and Civil Defense

LEO A. HOEGH*
Washington, D.C.

For several reasons, I was particularly pleased when asked to submit an article for publication in this special issue of MINNESOTA MEDICINE.

Minnesotans are energetic, progressive, and rugged. They have a faith in their future and that of the Nation which is unsurpassed. This spirit is essential to the development of effective civil defense and defense mobilization.

The Federal Civil Defense Act of 1950 placed primary responsibility for civil defense on the States, with Federal Government assigned a supporting role. This presented a challenge to the States to exercise their responsibilities, and it is gratifying to me that Minnesota has met this challenge and the responsibilities headon.

Because of your pioneering efforts, OCDM has learned much from you. Your achievements will help us even more now, with the advent of PL 85-606, where in the responsibilities (especially financial) are shared to a fuller degree with the States by the Federal government.

The progress that you have made in the State of Minnesota, I am sure, is not due to any single individual or single group. It has necessarily been the product of team work among many. I am sure also that the medical profession has been foremost in pulling its fair share of the load and more. I congratulate the Medical Association of the State of Minnesota, the individual members of this great organization, and the great medical centers all of which have given unselfishly of their time for the common cause.

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*Director, Office of Civil and Defense Mobilization. Former Governor of Iowa

I do not predict that a nuclear attack is going to be made on the United States. I do not expect one. I do know that such an attack is possible, and so long as there are nuclear weapons and the Russians have the ability to deliver those weapons, we must have an unfailing ability to survive such a blow as a nation, to recover from it, and go on to win.

Should such an attack occur, the many localities throughout this country must necessarily carry the brunt of the immediate survival actions required until such time as organization can be effected and assistance can be marshaled from unaffected areas. You people who represent the medical profession are, by the very nature of your calling automatically dedicated followers of any efforts of civil defense. You have been trained by education and experience to expect anything and to prepare for it even as you hope it will never occur.

We can only help you in discharging your responsibilities. We can do this by helping to provide that which you require in the discharge of your responsibilities. But it is you on the firing line who in the final analysis must utilize what can be provided, from whatever source.

To your credit you have developed an emergency blood program, with legislative authorization, that is well underway. We have been pleased to assist financially in making this program operational.

Your State has requested and received 43 Civil Defense emergency hospitals that are positioned around the State and it is you who have made plans to utilize this equipment should it ever become necessary. Without your planning, your assistance, your skills and knowledge these inanimate pieces of equipment and supplies can never become alive and provide a functioning hospital devoted to the saving of lives and the restoration of health upon which so much of our future may depend.

Similarly, it is you who have made use of the three training hospitals assigned to the State of Minnesota to aid in familiarizing the medical profession with the Civil Defense Emergency Hospitals so they can be utilized to their fullest.

Our National Plan for Civil Defense and Defense Mobilization sets forth the specific mission of each level of government—Federal, State and local—for professional organizations and individual citizens. All the civil defense principles and responsibilities for protecting life and property are clearly presented in this document.

It revolves around the goal of protecting life and property from the effects of attack by preparing for and by carrying out emergency actions to prevent, minimize, and repair injury and damage. It spells out the functions, one by one, on how the mission is to be accomplished, and by whom.

The Annexes to the National Plan expand upon the Plan in various areas of interest.

Annex 18, The National Health Plan, delineates in considerable detail responsibilities placed on the U. S. Public Health Service primarily, and also other Federal agencies in the health field and makes it possible for the U. S. Public Health Service to attack the manifold problems in the health and medical field on a broad front. Appropriations during the current fiscal year provide about $1 million to that agency for discharging these responsibilities. We are seeing much greater progress at the national level as a result.

Annex 30, National Manpower Plan, similarly provides guidance in handling the problems of manpower. Doctors are more familiar with this problem through their acquaintance with the procurement and assignment service of World War II and the “doctor draft” of the Korean conflict than most people. While the general problems of manpower are the responsibility, as set forth in Annex 30, of the Department of Labor, health manpower is the responsibility of the Department of Health, Education, and Welfare. This too is a significant accomplishment and places the responsibility where the best competency is available that knows the problems of the medical profession and has historically cooperated with the medical profession.

The National Water Plan, Annex 32, places responsibility for this vital problem also with the Department of Health, Education, and Welfare. The Public Health Service has direct responsibility for portable water supplies. The Annex also charges the Department of Health, Education, and Welfare with the responsibility for coordinating plans in all water aspects. This too is a significant forward step.

With these actions and many others as a background, we can expect to see more concentration on resource studies leading to the development of providing greater reserves for meeting potential emergencies. Hopefully it would enable us to provide a stockpile within the confines of the State of Minnesota. However, only if additional procurement can be undertaken, will such action be possible in significant magnitude.

I can give you the five points we are urging on all Americans:

1. Know warning signals and what they mean.
2. Know your community's plan for emergency action.
3. Know protection from radioactive fallout. This means—know enough about the silent, deadly fallout from a nuclear explosion to prepare a shelter, preferably underground. Be prepared to stay in a shelter at least two weeks if necessary. Any shelter is better than no shelter, but you can do the job right by dropping a card to OCDM Home Shelters, Battle Creek, Michigan, to get simple instructions. If you have no shelter when attack comes, you may die, for fallout may well cover most of our nation.
4. Know first aid and home emergency preparedness.
5. Understand Conelrad, which means tuning to 640 or 1240 on your AM radio dial for emergency instructions in the event of attack.

If every American would learn these five fundamentals now, we could guarantee the survival of millions of Americans who would otherwise die in the event of attack!

To increase our nation's non-military preparedness, OCDM is pushing ahead on a broad front.

We are working hard on the Continuity of Government program, which is designed to keep civil government functioning effectively during and after attack. This program would enable State and local governments to: (1) Establish automatic lines of succession for appointed and elected officials, legislators, members of the judiciary, and other key officials; (2) Preserve essential records needed to protect rights of individuals, and to conduct emergency operations; (3) Establish emergency locations for government so that States, counties, and cities can continue to operate; and (4) Plan to use all personnel, facilities, and equipment of government for emergency action.

Forty-three States have introduced all or part of the suggested Continuity of Government legislation. Thirty-eight have secured passage of all or part of this legislation in both houses, including approval by the citizens of constitutional amendments by legislatures in 16 States.

Operational survival plans have been developed by all of the 50 States, the District of Columbia and the Commonwealth of Puerto Rico. Within the States, plans have been completed to cover 240 target areas. At local level 52% of the counties have a civil defense director and a State approved plan. This planning is being extended to all counties and local political subdivisions.

The survival message, which urges Americans to build their own home shelters, is getting through to more and more families every day.

An extensive educational program in the basics of radiological defense is gaining steadily. Hundreds of thousands of persons are being trained with instruments to detect and measure post-attack fallout.

If nuclear war ever comes, the battlefronts will be our own front yards, be they in Minnesota, Florida, or California. While our leaders strive for peace, we must strengthen our total defense, inspired by the knowledge that an adequate civil defense is also a powerful deterrent to enemy attack.

If a man does not make new acquaintances as he advances through life, he will soon find himself alone. A man, Sir, should keep his friendships in a constant repair.—*Samuel Johnson*

Editorials

PREPAREDNESS — SECOND ONLY TO KEEPING PEACE

In a statement to the armed forces just before Christmas, President Eisenhower said "Peace is the responsibility of our time." Today, the burden of this responsibility rests heavily on the shoulders of our country's leaders and those who head the many other nations of the world, and I'm sure all of us as we go about our daily lives are aware of the delicate balance between peace and conflict which exists in our world.

But our responsibility extends to preparedness; second only to keeping the peace is being prepared for any eventuality.

The role of Civil Defense is vital to preparedness — it is vital to every man, woman and child in the United States for it provides the method and the organization for safety and survival at time of attack or disaster.

No one doubts the importance of Civil Defense, however too many of our citizens simply accept it and do little or nothing about it. There isn't a person who wouldn't say "I'll do anything I can to help keep the peace"; now it should be our objective to continue this concern and interest into active participation in Civil Defense and support of its programs.

It is both significant and gratifying that the Medical profession in Minnesota has recognized this responsibility and has organized in a manner which meets the highest standards of Civil Defense preparation.

A keystone of any society is the health and well being of its individuals and only the Medical profession can provide the necessary measures in time of disaster to alleviate the effects and restore and safeguard our public health requirements.

The Minnesota State Medical Association, its members, and its Committee on Civil Defense and Civilian Disaster are to be commended for their continuing efforts in behalf of Civil Defense. This special issue of Minnesota Medicine is an example of the many positive steps which are being taken throughout the country for a more thorough knowledge of Civil Defense and its requirements.

Most of us at some time in our lives have come upon an emergency scene and have observed a doctor rushing to aid the injured — a doctor who like us was just passing by at the time — or a factory worker on his way home who quickly dons his Civil Defense helmet to help direct traffic. It is at these moments that we, the public, salute you — silently perhaps, but meaningfully. You are needed and the need is great.

Civil Defense is a governmental responsibility, but it can function only through the maximum use and organization of many capabilities that are offered entirely on a voluntary basis. It behooves all of us to concentrate on the objectives and assist our leaders in formulating the policies and programs which can be most effective.

Governor Elmer L. Andersen

CIVIL DEFENSE CONTROL CENTER

This issue of MINNESOTA MEDICINE is devoted primarily to the subject of Civil Defense. It is hoped this presentation will not only be informative, but will stimulate the greatly needed interest and support so necessary for its success. We are all concerned about our individual safety when health is involved, but the majority of us, I feel, have assumed a "Let George Do It" attitude when it comes to the Civil Defense Program. I can classify myself as one of the "Let George Doers," but a recent experience changed my thinking.

Some months ago, I had a conducted tour of a Civil Defense Control Center. That in itself is not remarkable, but I felt that the Center itself was. We approached the area through a National Guard Unit Post to the foot of a mountain. We rode up over a rise to a smaller plateau, and then proceeded on foot. At the base of the mountain, a flight of defense unit in the center of the mountain occupied an excavation of 104,000 cubic feet. It had been blasted out of the solid mountain granite, and had an over-all length of 118 feet. This excavation housed the main building of the Center. This building had an over-all length of 95 plus feet, and its width was 52 plus feet. Its walls of solid concrete varied from 12 to 24 inches in thickness with a roof of 36 inches of solid concrete. Between the walls and roof of the building, and the limits of the excavation was an air-space or run-way of about three feet in width which could cushion the walls against falling rock in event of a direct hit. The building has 18 rooms with a capacity to house 100 persons. There is stored here food, water, and fuel to supply its inhabitants for 30 days. As a control center, its connections to the outside world are supplied by 9 trunk telephone lines; 18 units of radio equipment, and it has its own emergency power plant to handle everything but heat.

As you tour this structure, you see the two-level control rooms with booths for all key personnel over-looking a detailed map of the area painted on the entire floor space below. Each key station maintains communication to their respective units in the outside world. You see the well-set up radio room where the "ham operators" will take over if the regular communication systems are destroyed. You see the sleeping quarters and the dining room with the adjoining kitchen equipped with all modern appliances. At each emergency entrance, you see the showers used to remove the radio active material on persons exposed before they can enter the building. You see the new clothing they put on after they have discarded their worn exposed clothing. You meet the personnel who cover each 24 hour vigil.

After a two hour exposure to this set-up, you are not apathetic anymore. These people are not playing games. They are in a target area, and they know it. They have done something about it. The man who was our guide on this tour was our own Doctor Carl Waldron, chairman of the Civil Defense and Civilian Disaster Committee of the Minnesota State Medical Association. He has been the motivating force in that civilian defense area as he is in ours. We hope this issue of MINNESOTA MEDICINE dedicated to our Civil Defense will render easier the task, Doctor Waldron and the members of his committee have set out to accomplish. Remember that Civil Defense is not an agency just set up for combating the threats and fruits of war, but it also is a defense against all disasters threatening even temporarily our community life.

C. L. Oppegaard, M. D.
President, Minnesota State Medical Association

DISASTER MEDICAL CARE IN THE SIXTIES

The progress toward operational efficiency in the field of disaster medical care has been characterized by peaks and valleys of activity. If the advances made during the opening year of this decade are any criterion of the prevailing enthusiasm of medical-health personnel, we should see great advances during the sixties.

The increasing sophistication of disaster medical care programs is the direct result of a number of special events which erupted in 1960. The report of the Commission on Disaster Medical Care of the American Medical Association has been widely utilized in the field of organization, education and training.

The United States Public Health Service expanded the activities of the Division of Health Mobilization. We can hope their subsequent curtailment of objectives during the latter part of 1960, because of budgetary restrictions, is only transitory. The use of the report of the Commission on Disaster Medical Care by the Division of Health Mobilization in planning for a national administrative organization reflects the value of the report as a basis for new developments. The training courses given by the United States Public Health Service and the Office of Civil and Defense Mobilization at the OCDM Training Center in Brooklyn, Battle Creek and Alameda contributed greatly to the increased knowledge of medical-health personnel and their subsequent accelerated activity. In the courses, for the first time, broad aspects of exotic types of non-military defense (Chemical, Biological and Radiological) were presented. A similar approach was given to the Public Health aspects of disaster medical care.

The joint sessions, in Chicago, of the County Medical Societies Civil Defense Conferees and the Secretaries and Chairmen of Disaster Medical Care Committees of State Medical Associations had a most effective impact on those in attendance. The Minneapolis meeting of the Medical-Health Section of the United States Civil Defense Council brought together representatives of eleven supporting agencies, societies and organizations. Such sessions need the guidance of the medical profession. They promote a full measure of co-operative effort among all those concerned with the many facets of disaster medical care. The outstanding Test Alerts held in various sections of the country contributed to the nation's advancement toward medical-health preparedness in case of natural or man-made disasters. New ideas on the how-you-do-it concepts of Test Alerts has spread across the country. We will see more of these practical applications of "paper plans" as we advance into the sixties. Hospital disaster plans will be strengthened and become more stringent in their application.

There is presently a reactivation of Disaster Medical Care Committees at the State and local levels. Physicians and supporting groups are seeking assistance in transfusing greater strength into their committees. Positive programs are desired and are being developed.

Such programs at the state and local level of all groups could include the following:

A. An issue of their official publication devoted to disaster medical care.
B. Committee chairmen appointed for a minimum period of three years.
C. Committee vice-chairmen appointed who will succeed the chairmen after three years. This for continuity of effort and in the interest of proper knowledge.
D. A half day or full day session devoted to disaster-medical care immediately prior to the annual meetings of State medical-health organizations.
E. Medical Schools to sponsor Test Alerts, annually, as a part of the MEND Program.
F. Medical Schools to sponsor an annual postgraduate course in Disaster Medical Care.
G. Appointment of a Governor's Advisory Committee of physicians of such stature as to influence legislative appropriations. This committee to act in an advisory capacity to the State Health Director as well.
H. Develop a Medical-Health Inter-organization Committee composed of the Disaster Chairmen of each society or association supporting disaster medical care, chaired by the Chairman of the State Medical Association's Committee on Disaster Medical Care.
I. Provide Merit Awards for physicians who have spent at least five years of dedicated effort in the disaster field or made an exceptional contribution in this field. Stimulate similar activity among ancillary groups.
J. Duplicate the State program at the local level appropriately.
K. Arrange for regional meetings to work out mutual problems.
L. Arrange for state sectional meetings to unify and coordinate the state program.

These activities should be pointed toward organizational stability, manpower mobilization, education, training and utilization of the 200 bed Emergency Hospital.

Manpower mobilization should be pointed toward the development of a master file in the State Health Directors Office which contains the names, addresses and capabilities of medical-health personnel residing in the State. The county or district component to be responsible for providing the data and keeping it up to date. Some thought should be given to joint action by the State Medical Association, Selective Service and the local Medical Society in designating M-Day assignments for physicians. We can hope that this would alleviate some of the confusion existing when no plans are made in advance even though plans are not always perfect when need for their use arises.

Education and training can be pursued through use of the Report of the Commission on Disaster Medical Care of the American Medical Association. We can expect the United States Public Health Service to provide, through the State Director of Public Health, training courses and aids. This sort of a package program is essential to assist busy practioners in carrying on their disaster medical care obligations.

The utilization of the 200 Bed Emergency Hospital can be pointed toward actual operation of the training hospital or its inspection by medical-health personnel. Smaller units are needed, perhaps of 50 bed capacity, which can be assigned to all small hospitals for their immediate expansion in time and an over-taxing emergency. Larger units are effective at later periods in the chronological order of disaster events and for rehabilitation.

Success will result through full cooperation, hard work, perseverance, forthrightness, the elimination of duplication of effort, adequate funding at all levels of government, the development of a nation-wide Blood Program, the employment of full time personnel in the State Health Directors Office to assist in developing Disaster Medical Care Programs and the development of a United States Public Health Reserve Corps similar to that of the Army, Navy and Air Force, but devoted to the internal medical security of the country.

Carroll P. Hungate, M. D.*
Kansas City, Missouri

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* Chairman, Health and Welfare Committee
United States Civil Defense Council

President's Letter

MEMO: — re: — 1961 STATE MEETING

During the sessions of the annual meetings of the Minnesota State Medical Association, it has been the custom to furnish adjoining quarters for the president and the chairman of the Council. I have had the opportunity to enjoy this relationship each year since 1955, due to my position as chairman, and this year as president. It has made it possible for me to observe the excellent men, first hand, who have been elected by the Association to fill these posts, and this year's chairman of the Council was no exception. In addition, it has given us an opportunity to observe, and visit with, the out-of-state guests and speakers as they seek respite from their chores, in our quarters. I wish to devote this letter to that effort, as I feel that this year more than ever, we were honored by a very select group of distinguished notables.

The first of these is Dr. Edward R. Annis of Miami, Florida. History has indicated, and events have proved, that when crises arrive upon the scene, someone from somewhere arises out of the masss to lead. Such a man is Dr. Annis. In spite of a busy surgical practice, he has felt duty bound to inform the public of medicine's unselfish concern about the increasing encroachment upon individual rights, that is being promoted by some of the New Frontiersmen. Whether he is seen on the T-V screen, or in public, he is the perfect example of a doctor being a citizen. I am sure in the privacy of his office, he also exemplifies a doctor being a doctor. However, it is in private conversations that his charm, his sincerity, and his devotion to his theme, "a doctor is a citizen too," is so evident. We are indeed fortunate that we have him as one of our leaders in our legislative battles of 1961.

I have had the good fortune to hear our next notable visitor on two previous occasions before he honored us with his presence as our banquet speaker this year. I refer, of course, to Mr. Chester Lauck, the "Lum of the Jot 'em Down Store" of past radio history. His views on socialized medicine, and the reasons for his opposition to that mechanism was enthusiastically received by our banquet audience. Many of his points were highlighted by the incidental interpolations of his former radio characterizations. As a business executive, and a person who grasped the opportunities that a free nation had given him to make his way, he presented the concern of the millions of independent Americans pertaining to our present trend in governmental thinking. This concern which he personally shares so strongly did not leave him when he left the banquet table, but was re-emphasized again and again, as we visited with him personally. As one sat and talked with him, the closing words of his banquet address returned again and again, as they, without his knowledge, portrayed the man, Chester Lauck.

"We need roots to hold us firm, and we need sky to hold us up, and in between, a living process. Because, out of our beliefs we perform deeds, and out of our deeds we form habits, and from our habits grow our character, and **ON OUR CHARACTER WE BUILD OUR DESTINATION."**

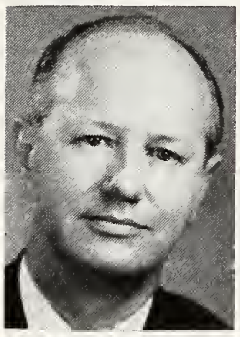
It gives me the greatest satisfaction and pride to present the last notable visitor. By the time you read this, he will have been inaugurated as our President of the American Medical Association. I refer, of course, to Dr. Leonard Larson of Bismarck, North Dakota. This gentleman is practically a lifelong friend; having been born and raised twenty miles from my home, and having been a class-mate through the long years of medical school education. "Shorty" as he is affectionately known to all of us, was always a student; always willing to serve when called upon; a reliable plugger; never capturing head-lines, nor desiring to; nor was he ever then, or now, envious of those who justly received them. His first contact with the American Medical Association was in 1940, when he was appointed to the Rural Health Committee. His contacts with the Association became increasingly involved, and his value to medicine became evident when he was elected to the Board of Trustees. He later served as its chairman. You do not reach that height of responsibility by accidentally being in the right place at the right time. You reach it by proved ability; by devotion to duty; and by recognition from your fellow leaders that here's the man for the job. They recognized such a man in Dr. Larson. Although short in physical stature, he is not short in executive stature, or leadership. He will continue the fine tradition of the previous presidents of our A.M.A. We, of Minnesota, are proud to claim him as our own, coming as he does from our neighboring state, and as a graduate of our State University.

C. L. Oppegaard

President, Minnesota State Medical Association

VARIED ACTIONS TAKEN BY THE HOUSE OF DELEGATES

Dr. Haddon M. Carryer of Rochester was named President-elect at the closing session of the House of Delegates on Sunday afternoon, May 21. Presently Dr. Carryer is serving as speaker of the House.


Dr. Carryer

Other officers elected include: Dr. O. L. N. Nelson, Minneapolis, First Vice-president, Dr. Eugene E. Scott, St. Paul, Second Vice-president, Dr. B. J. McGroarty, St. Paul, Secretary (re-elected), Dr. Karl W. Anderson, Minneapolis, Treasurer, (re-elected), Dr. John L. Falls, Red Wing, Speaker of the House of Delegates, Dr. John T. Pewters, Minneapolis, Vice Speaker. Councilors: Dr. Peter E. Hermanson, Hendricks, Councilor, Third District (re-elected), Dr. John P. Medelman, St. Paul, Councilor, Fifth District (re-elected), Dr. William W. Will, Bertha, Councilor, Seventh District (re-elected). Delegates: Dr. Albert E. Ritt, St. Paul, (re-elected), Dr. Ernest M. Hammes, St. Paul, Alternate Delegate (re-elected), Dr. Orwood J. Campbell, Minneapolis, (re-elected), Dr. Chester L. Oppegaard, Crookston, Alternate, (re-elected).

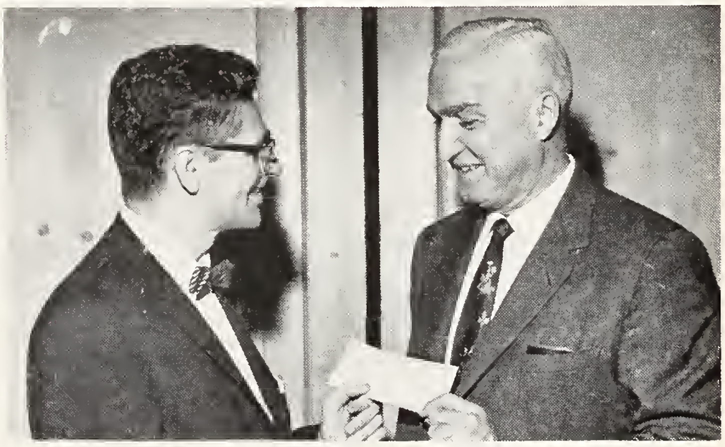
A relative value plan for use by Minnesota doctors was adopted by delegates attending the 108th Annual Meeting of the Minnesota State Medical Association, May 22, 23, and 24, in St. Paul.

The action taken by the Delegates follows a three year study of the matter by the Medical Committee, Dr. H. F. R. Plass, Chairman.

Results of the survey recently conducted among members of the Association throughout the state are currently being compiled by a firm of actuaries. Upon completion the results will be submitted to Minnesota specialty groups and the Minnesota Academy of General Practice for their review. This recommendation will then be submitted by the Medical Service Committee to the Council for its approval. Meanwhile, Delegates voted to approve the use for 1961 in Minnesota of the California Medical Association's Study. This merely sets up basic relationships between various medical and surgical procedures. It sets no specific dollar value.

A variety of awards were presented at the Annual Banquet, Tuesday, May 23. Former MINNESOTA MEDICINE Editor, Doctor Arthur H. Wells of Duluth, was the recipient of the Distinguished Service Award. Two of the twenty-nine Minnesota physicians who received Fifty Club awards were Doctor William H. Hengstler, 542 Lincoln Avenue, St. Paul, and Doctor Carl C. Chatterton, 56 Arundel, St. Paul.

A resolution which would authorize another "yes or no" poll on Social Security for physicians introduced by the Goodhue County Medical Society failed to gain the approval of the Delegates. During the course of discussion on this matter, the Minnesota State Medical Association's legal counsel, Mr. Jule Hannaford pointed out that the new Minnesota corporate practice law provides that physician members of such corporations will be automatically covered by Social Security.


Doctor Robert B. Howard, Dean of Medical Sciences, University of Minnesota, received a check for $18,373.32 from Doctor Charles E. Rea, St. Paul, Chairman of the 1960 Minnesota State Medical Association AMEF Committee. The grant to the University of Minnesota Medical School is part of $1,172,599.60 contributed by physicians to A.M.E.F. during 1960 and being distributed now to 85 medical schools across the U. S.

Delegates approved a Range County Medical Society resolution which stated that the re-establishing of a comparable relationship between Blue Shield and Blue Cross would be to the advantage of both the patient and physicians of this state.

Earlier in the two-day session of the House of Delegates, Dr. Richard R. Crammer, Blue Shield Executive Director reported that Blue Shield will soon go on the general market with its own hospital payment rider. Blue Shield was granted permission to sell its own hospital coverage plan at a special meeting of the House of Delegates in January, 1961. The permission was granted contingent upon a number of requirements established by the Delegates at the January meeting. Dr. Cranmer informed Delegates that Blue Shield had already complied with a number of these requirements and is in the process of complying with others enumerated by Delegates in January.

Delegates voted to discontinue the Minnesota State Medical Association's sponsorship of the A. A. P. S. Essay Contest. The action was taken following the recommendations made to the group by State Auxiliary President, Mrs. Walter P. Gardner of St. Paul. During the past two years a number of local Auxiliaries have sponsored the contest in cooperation with the participating county medical societies. Mrs. Gardner recommended that the Essay Contest be dropped because: (1) Interest in the contest is slight. (2) The quality of the essays received is mediocre. (3) School superintendents and high school teachers do not favor it. (4) The return in terms of student interest and participation is not worth the investment in time and efforts by the Auxiliary and the Association.

Fifty Club

Twenty-nine Minnesota physicians who have practiced medicine in Minnesota for 50 years were candidates for Minnesota's Fifty Club, and received special citations and awards at the 108th Annual Banquet on Tuesday, May 23, at the Saint Paul Hotel.

Physicians who received the Fifty-year Service Citation in 1961 include: Edgar D. Brown, M. D., Paynesville; Frederick H. Buck, M. D., Shakopee; Theodore A. Clifton, M. D., Hollywood, Florida; Leon H. Flancher, M. D., Crookston; Charles E. Goodman, M. D., Virginia, Frederick E. Hill, M. D., Riverside, California; Lawrence J. Kaasa, M. D., Albert Lea; William C. Kaufman, M. D., Appleton; John P. McDowell, M. D., St. Cloud; J. K. McKenna, M. D., Austin; Daniel C. O'Connor, M. D., Eden Valley; John deJ. Pemberton, M. D., Rochester; John T. Rose, M. D., Lakefield, Philip E. Stangl, M. D., St. Cloud; Hugh O. Williams, M. D., Lake Crystal.

St. Paul physicians: Carl C. Chatterton, M. D.; William H. Hengstler, M. D.; Bartholomew Leahy, M. D.; Archibald Leitch, M. D.; Dale D. Turnacliff, M. D.

Minneapolis physicians: Moses Barron, M. D.; Christian A. Fjeldstad, M. D.; Claude C. Kennedy, M. D.; Hermann M. Koller, M. D.; Louis R. Koller, M. D.; John M. Lajoie, M. D.; Michael W. Lyons, M. D.; Court R. Stanley, M. D.; and Thomas Ziskin, M. D.

Dr. Kenath Sponsel, Minneapolis, was named to receive the Southern Minnesota Medical Association award. This award is given annually to the individual physician who prepared the most outstanding scientific exhibit for the meeting. "Finger Flexion Tendon Lacerations," the advancement techniques in the lacerations of the distal two thirds of the thumb and finger.

Minnesota Medicine

The matter of editorial responsibility in connection with MINNESOTA MEDICINE was brought into focus by a resolution from the Academy of General Practice which asked that "the House of Delegates of the Minnesota State Medical Association direct the Board of Editors of MINNESOTA MEDICINE to publish any letters sent to the editor over the signature of the writer, irrespective of whether or not such letter is in accord with, or opposed to, the opinions published by the Editor-in-chief or the Board of Editors."

The report of the Reference Committee on Resolutions on this question was adopted unanimously by the Delegates. It called attention to the fact that intense interest and concern exists that the principle of freedom of expression should not be abridged in connection with the editorial policy of MINNESOTA MEDICINE. It declared at the same time, that full responsibility for the editorial content of MINNESOTA MEDICINE does exist in the Board of Editors and it expressed the opinion that the wording of the resolution in question precluded a recommendation for its approval.

The Delegates also voted to accept the recommendation of the Reference Committee on Medical Economics to which the report of the Board had been referred for consideration. This report commended the former editor-in-chief, Dr. A. H. Wells, for his seven years of service to the journal and noted with approval the measures which the Board is taking to meet changing economic conditions in the publication of medical journals.

On the basis of reports of the Reference Committees, Delegates took action to recommend that an advisory board be established by the Minnesota State Board of Health to consult with hospitals in the purchasing of anesthesia equipment. This action was taken upon the recommendation of the Committee on Anesthesiology. Also approved was the recommendation that all instances of resuscitation for cardiac arrest by physicians of the state be reported to the State Department of Health. This procedure will make it possible to review the various methods used for this procedure.

No action was taken on recommendation of the Reference Committee to the Committee on Pulmonary Diseases proposal that the means test for care of institutional tuberculosis patients be dropped. It was recommended that this matter be referred to the Legislative Committee for consideration.

Delegates voted to accept the invitation to hold the 1963 Annual Meeting in Duluth.

DISTINGUISHED SERVICE AWARD

Dr. Arthur H. Wells, Duluth, was named the recipient of the Minnesota State Medical Association's Distinguished Service Award for 1961. The honor is given annually to a state physician for outstanding service to the practice of medicine and his Association.

The award was presented to Dr. Wells at the Annual Banquet of the Association, Tuesday night, May 23, at the Saint Paul Hotel.

Dr. Wells was honored for his role as editor-in-chief of MINNESOTA MEDICINE, a post he held from September, 1953, to January 1, 1961. He was also cited for his work as a member of the Cancer Committee of the Association and his efforts to stimulate local cancer detection clinics throughout Minnesota.

In addition to his work in Minnesota, Dr. Wells has had an active role nationally in a project sponsored by the Committee on Nomenclature and Classification of Diseases of the College of American Pathologists. He has served as chairman of the project committee for the past two years, which is being financed by a grant from the National Institute of Health, United States Public Health Service.

Quoting The Annual Meeting Speakers

The American Medical Association has embarked on "perhaps the most extensive, constructive program in history to improve health and medical care for the American people," Dr. Leonard W. Larson, A.M. A. President said May 21 in an address to the 108th Annual Meeting of the Minnesota State Medical Association. He sketched some of the more significant A. M. A. projects in scientific and socio-economic fields.

Dr. Larson declared that while most of the recent publicity about the A. M. A. has been focused on its legislative activities, "the great bulk of the Association's activities are, and always have been, concerned with scientific aspects of medicine and improvement of medical care for our people."

He enumerated these areas as being among those which will occupy increased attention by the A. M. A. in the coming months, all of which are aimed directly or indirectly at improving the health of the nation:

1. A new assault on medical quackery.
2. The most comprehensive study ever undertaken of infant mortality.
3. A stepped-up information program to acquaint physicians and the public with progress in the endless conquest of disease.
4. Implementation of plans for an A. M. A. scholarship and loan program aimed at inducing increasing numbers of bright young Americans to enter the profession of medicine.
5. The first national congress on prepaid health insurance, which will be held in Chicago to explore ways to improve health insurance, increase its availability and reduce its cost.

"These are but a few of the many constructive programs in which our Association is engaged for the betterment of the health of our people," Dr. Larson said.

He said the problem of medical quackery will be examined at a national conference on quackery in Washington, D. C., this fall.

Representatives of the A. M. A. will meet with officials of the Food and Drug Administration, Better Business Bureaus and Chambers of Commerce "to discuss all forms of medical quackery," Dr. Larson said.

"This national conference," he added, "is part of our overall campaign to help the American public spend its health dollar more wisely. Millions of dollars each year are wasted on useless food supplements, reducing aids, quack remedies and unnecessary self-medication."

Dr. Larson said that "while medical science has effectively reduced maternal mortality to an historic low, there is still work to be done in the infant mortality area."

He said the study will be nationwide in scope and, while still in pilot form, has received the overwhelming acceptance of hospitals throughout the nation.

"Lum" Warns of Federal Role In Health Care

Chester Lauck, better known to millions of Americans as "Lum" in the "Lum and Abner" radio series was the speaker at the Annual Banquet on Tuesday, May 23, in the Saint Paul Hotel.

Now an executive assistant to the president of the Continental Oil Company, Mr. Lauck told the banquet audience that "our forefathers who carved civilization out of the wilderness didn't ask for federal aid to education or social security. They rolled up their sleeves and said: 'Thank you, God, we'll take it from here.' That's the kind of spirit we need today."

Commenting on what the advent of Socialized Medicine would mean, Mr. Lauck said to the physician audience "you wouldn't have to read those dull old medical journals any more. You won't have to specialize, you won't have trouble getting Thursday off unless you're on the swing shift." "It's a vote-getting device, make no mistake about that," he assured the doctors and their wives. The public doesn't want it."

He said that Russia's total emphasis on "socialized welfare programs" (federal aid to education, medical care, etc.), helped to aid Russia's cause by weakening the dollar and weakening the individual's sense of responsibility.

"Let's not wait to read the handwriting on the wall until we've got our back to it. As government gets bigger and bigger, people get smaller and smaller until they don't matter at all," commented Mr. Lauck.

Dr. Annis Is Annual Meeting Guest Speaker

Dr. Edward R. Annis, the unofficial spokesman for the nation's doctors on the question of national health insurance was an honored guest at our Annual Meeting.

He was the speaker at the New Members, County Officers and Delegates Banquet, and also gave a greeting at the Annual Banquet.

During his various addresses to physicians and community group audiences, in Minneapolis, St. Paul, and Rochester, Dr. Annis reaffirmed the American Medical Association's position that the King-Anderson Bill is "mislabeled" as insurance or as Social Security.

Dr. Annis said "it is not anyone of these things, it is Socialized Medicine." He pointed out that the A. M. A. supports the principles of the Kerr-Mills Bill because under it medical need would be determined by the local community.

According to Dr. Annis about 16 million Americans over the age of 65 would be affected by the medical care legislation. Of this number there are only approximately 4 million persons who cannot afford adequate medical care.

Dr. Annis said that the A. M. A. is concerned about these 4 million persons. However, for the great majority insurance is the best way to take care of their needs. Dr. Annis also pointed out that the A. M. A. is working with Blue Shield on a care plan which would be available to the aged.

Attacking the King-Anderson Bill now before congress as "unworkable" Dr. Annis remarked that "any program tying medical care to Social Security is Socialized Medicine, and Socialized Medicine does not work."

Dr. Annis noted that "Socialized Medicine has apparently worked in Sweden, but the Swedes in Sweden don't live like the Swedes in Minnesota." He asked "How many Swedes own cars? how many own T. V. sets? These things are the measures of an independent society."

"If a man is able to own his own car, his own T. V. . . . then he ought to be able to buy his own health insurance—not federal aid—is the best answer for the majority of the people."

Commenting on the failure of Socialized Medicine in England, Dr. Annis said, "fourteen or fifteen years ago the government stepped in and took over the hospitals with Socialized Medicine then they took over the doctors and they are paying for the system through excise taxes. Englishmen pay a 66⅔% tax on automobiles and a 100% luxury tax on items we in this country consider necessities. The government takes another 40% from personal income leaving the Englishman 60% of his earnings with which he can't afford to buy necessities for himself and family."

According to Dr. Annis socialism would result from the worker before "we even spend it" and being used "for our own benefit" as declared by an all powerful government.

Dr. Annis called the King-Anderson Bill a "political issue pushed by the A. F. of L-C. I. O. and not a true extension of social security. It's rather a setting up of social security mechanism merely to raise more money.

Commenting on the cost of medical care, Dr. Annis said "many people tell me that doctors are pricing themselves out of the market and that drugs are too expensive. Some even claim it's cheaper to die than to be sick. They say the high cost will lead to Socialized Medicine."

"But does it cost too much? What is it worth? This is the jet age of medicine not the horse and buggy age. Doctors have not taken time out from their practice of helping the sick to educate the public regarding the cost of modern medicine.

"Hospital labor alone accounts for an average of 70 per cent of medical cost, and drugs also are an expensive price. But people fail to realize the high degree of training and education of hospital personnel or the millions of dollars spent in research and development of modern drugs.

"Certainly modern drugs may be less expensive in other countries, but that's because we give them the formulas and they do not have the added expense of continuing costs for the experimenting and researching necessary to discover drug formulas for themselves. Also, labor costs abroad are lower.

We admit medicine and drugs are costly and they are going to continue to cost. But honest thinking Americans don't ask, "how much does it cost?' but rather, 'how much is it worth?' "

The ass will carry his load, but not a double load; ride not the free horse to death.—*Cervantes*

Better a little chiding than a great deal of heartbreak.—*Shakespeare*

Those who play with cats must expect to be scratched.—*Cervantes*

The Art
of
Medicine

PR

Carl H. Woyke
Editor

GOOD PRESS RELATIONS REQUIRE DOCTOR-PRESS COOPERATION

News about the art and science of medicine is receiving a "bigger than ever" play in the newspapers, on radio and television. The accuracy of this news and medical science information is dependent to a great extent upon the relations which medical societies maintain with the press.

The medical profession has often argued that newsmen do not accurately report the facts. The reporter is accused of "sensational reporting." The reporter argues that doctors do not cooperate to give out the facts about their profession and their patients.

Good relations with the communications profession is a must for every doctor and every county medical society. Such a relationship can only be maintained when representatives of newspapers, radio and television stations and magazines as well as the medical profession mutually agree upon duties, responsibilities and problems of all parties involved.

When such cooperation and understanding exist between representatives of the press and the profession, good public relations in the form of accurate medical stories and positive publicity will result; when these factors are not present, then the information media can be a dangerous foe, spotlighting flaws in our medical care system; overlooking its merits, and damaging the medical profession's reputation with the public.

MEDICINE AND THE CODE OF ETHICS.

For many years physicians feared that releasing medical stories to the press would result in condemnation of their colleagues from unethical practices. The tradition of the profession has been to bar advertising and "self-laudations which defy the traditions and lower the moral standard of the medical profession." To clarify this matter once and for all, the section of the medical Code of Ethics dealing with the relationship of the physician to media of public information has been revised. The code now stresses that it is the responsibility of the physician and the medical society to see that accurate information reaches the public.

In Minnesota a Code of Cooperation between hospitals and physicians and press, and radio and television was adopted in 1958. The cooperating organizations include: Minnesota Associated Press, Minnesota Newspaper Association, Minnesota Hospital Association, Minnesota State Medical Association, Northwest Radio-Television News Association.

Some of the important points included in the Minnesota Code of Cooperation are as follows:

I. **PURPOSE.** The purpose of this code is to promote understanding and cooperative action between the allied health professions and those who report medical news.

It is mutually agreed that the primary interest and consideration of the physician and the hospital are the care and welfare of the patient.

It is also agreed that newspapers, radio and television exist for the common good and function to bring matters of general interest to the public quickly and correctly and, therefore, the final decision on what is news remains with the newsman.

Understandably, harmonious relationships between the health and news professions can exist only in an atmosphere of mutual trust.

II. AUTHORIZED SPOKESMEN. Hospitals: It is necessary that each hospital have authorized spokesmen available and made known to representatives of the various news media at all times. Authentic information, as detailed below, shall be provided without interfering with the health, privacy, or legal rights of the patient, or jeopardizing the hospital-patient relationship.

Medical Profession: The officers, committee chairmen, or designated spokesmen of the medical societies shall be available and made known to representatives of the various news media at all times, to provide authentic information as promptly as possible on health and medical subjects. These spokesmen may be quoted by name and title. This should not be considered by their colleagues as self-seeking, or unethical since it is done in the best interests of the public and the profession.

News Media: Newspapers, radio and television shall furnish the names of newsmen with whom the hospitals and physicians may have direct contact at all times.

III. **IN MATTERS OF PRIVATE PRACTICE.** At all times the wishes of the attending physician shall be respected as to the use of his name or direct quotation. But he may legally give information to representatives of the various news media with the consent of the patient (where conscious and competent) or his relatives (where a minor, unconscious, or incompetent), as follows:

1. In cases of accident or other emergency: the nature of the injury and the degree of seriousness.
2. In cases of illness of a personality in whom the public has an acknowledged interest: the nature of the illness and the present condition.
3. In cases of unusual injury, illness or treatment which newsmen agree has news value: the above facts plus any scientific information that will lead to a better public understanding of the progress of medical science.

The medical societies shall urge all physicians becoming aware of such unusual developments to supply the facts for public information.

IV. **INFORMATION FROM HOSPITALS.** The authorized spokesmen of the hospital shall give the names of the attending physician when so requested. The name shall not be used in a written or spoken news report without the physician's consent.

A. Cases That Are a Matter of Public Record. In matters reportable to public authority and/or in matters of public record, the news media are entitled to have accurate and prompt information as to these matters. The following information may be given by a physician or hospital spokesman without the consent of the patient:

1. The patient's name, marital status, color, sex, age, occupation, firm or company employing him, home address, name of his next of kin or guardian.
2. The condition of the patient should be reported as good, fair, serious, critical, or dead on arrival. No additional description of the patient or his condition, and no prognosis.
3. A brief statement as to how the accident allegedly occurred (such as by auto, fall, burn, shooting, etc.). Give no details, and do not state or imply that the injury was self-inflicted.
4. Do not state or infer that the patient was intoxicated, or that any violation of the law was involved.

5. Describe the extent of the injuries briefly, as follows:

FRACTURES—If not confirmed by x-ray, use the words "possible fracture," and give location by limb or area only. If confirmed by x-ray, it may be stated that the fracture is simple or compound, naming the limb or area involved.

HEAD INJURIES—State head is injured, but do not say the skull is fractured unless confirmed by x-rays. Make no prognosis.

INTERNAL INJURIES—State general location only, such as the chest and/or abdomen.

SHOOTING AND/OR STABBING—State there is a penetrating wound and give its general location, but make no statement as to how this wound occurred.

POISONING—State the patient is poisoned, but give no information as to the kind of poisonous substance, nor how the poisoning occurred.

UNCONSCIOUSNESS—State that the patient was unconscious when brought to the hospital, but do not give the cause of unconsciousness.

BURNS—Indicate the part(s) of the body involved, and the degree.

6. The death of a patient is a matter of public record, and may be reported without the diagnosis or cause of death. Every effort shall be made to safeguard the family from premature broadcast or publication of death.

7. Births are a matter of public record, and such information concerning legitimate births as is required by the Division of Vital Statistics may be given.

B. In Cases That Are Not A Matter Of Public Record. In cases that are not a matter of public record, the physician and/or the hospital spokesman may release information about a patient only with the patient's expressed permission.

If the patient (other than a minor) is conscious and in condition to communicate with the doctor or nurse in charge, he shall be asked as soon as possible whether he will permit any information to be given, and his decision shall be final.

If the answer is affirmative, the physician or hospital spokesman will make available the same details as described in IV-A of this code, to the news media.

It is recognized that public officials and/or persons of unusual prominence are in the public domain to a greater extent than other individuals. Accordingly, information concerning general condition, treatment, and prognosis is a public concern and may be released after consultation with the attending physician.

V. **PHOTOGRAPHS AND INTERVIEWS.** Written consent or witnessed verbal consent of patients and the attending physician are necessary before pictures can be taken or interviews granted in the hospital. If the patient is a minor, the permission of the parents or guardian(s) and the physician will be required.

Deceased or unconscious patients may not be photographed.

Persons with severe burns or facial injuries, generally, will not be photographed, even though consent is obtained. Sound judgment must govern the exceptions.

VI. **PRESS, RADIO AND TELEVISION.** Press, radio and television newsmen acknowledge that the first obligation of the doctor and the hospital is to safeguard the welfare of the patient, and shall cooperate by refraining from any action or request that might jeopardize the patient's life or health and rights.

When a doctor or hospital authority is quoted directly by name, newsmen shall make certain to the best of their ability that the quotation is accurate both in content and context.

On all matters of general health news, newsmen shall make all reasonable efforts to obtain authentic information from authorized sources.

Minnesota Blue Shield

Minnesota Blue Shield is now making hospital coverage available as part of its medical-care plan.

This move was announced by Dr. Richard R. Cranmer, executive director of Blue Shield, in a report to the House of Delegates of the Minnesota State Medical Association, May 20.

At the same time, he reported that discussions have been held to explore the possibility of resuming joint selling between Blue Shield and the Blue Cross hospital plan. The two groups separated in late 1959.

"The Blue Shield hospital program will be available to individuals and groups who want to obtain both hospital and medical care protection through Blue Shield, but present plans do not call for extensive advertising or promotion of this new coverage," he said.

Dr. Cranmer said one of the immediate purposes in introducing the hospitalization coverage was to offer persons 65 and over a program "comparable in low cost and quality to the Blue Shield Senior Citizens Plan, which previously covered medical-care only."

While Blue Shield and Blue Cross representatives have held several meetings to discuss a combined selling program, this would not necessarily mean a return to the close association which formerly existed between the two plans, he explained.

"Despite the separation," Dr. Cranmer added, "there have been many instances where Blue Shield and Blue Cross have continued to carry on joint selling efforts. Both parties are now seeking to determine whether this activity can be expanded under some type of formal agreement."

Dr. Cranmer spoke before a business session of the House of Delegates preceding the 1961 convention of the Minnesota State Medical Association held in St. Paul, May 22-24.

The House of Delegates last January approved the introduction of Blue Shield hospital coverage, along with other changes in the medical-care plan, but added the proviso that its approval would become effective when Blue Shield had taken certain steps, including the discussion of combined selling with Blue Cross.

Dr. Cranmer said Blue Shield had also given councilors of the state medical association the opportunity to approve the representatives of their respective districts serving on the Blue Shield corporate body, another step recommended by the delegates at the January meeting.

A further request, to limit the tenure of corporate members to five years, instead of the present indefinite term, would be brought before the corporate body, he stated.

"Since this calls for a change in Blue Shield's by-laws, it is felt the entire membership of the corporate body should be consulted."

"In addition," Dr. Cranmer continued, "such a change would alter the conditions under which present members were originally elected. Whether this is permissible under the state law regulating Blue Shield will have to be determined."

Dr. Cranmer explained that Blue Shield can provide hospitalization coverage by merely adding a rider to its present medical-care contracts.

"Since hospital care is an incidental service to the doctor of medicine, this protection can be included in the Blue Shield medical care contracts, without setting up a separate organization or issuing a separate contract," he said.

The Blue Shield medical-surgical contract, without the hospital rider, will continue to be available, he stated.

Under the new program, subscribers may choose benefits providing hospital room allowances ranging from $10 to $25 a day, and covering from 30 to 730 days of hospitalization. The program will be available on a non-deductible basis or under a $50 or $100 deductible plan.

Prepared as a monthly message to participating physicians by Minnesota Blue Shield.

Medical Education

MEDICAL STUDENT CENTER PLANNED AT MINNESOTA 'U'

Plans for a new Medical Student Center have been unveiled at the University of Minnesota Medical School. The Minnesota Medical Alumni Association has undertaken a $70,000 fund drive to establish the center in the Mayo Memorial Building, headquarters of the 72-year-old medical school in Minneapolis. Support for the project is being sought from the 5,000 graduates of the school and all physicians practicing in Minnesota.

Dr. V. J. P. Lundquist, Minneapolis surgeon, was named chairman of the project. Doors are expected to open in September, 1962.

When ready, the new facility will provide:

1. A "ready room" for advanced clinical medical students assigned to the medical school's new comprehensive clinic program, where they will await calls, referrals, write case reports, etc.
2. Lunching and snack facilities for the 500-member undergraduate medical student body.
3. A lounge area for medical student relaxation, rest, conversation, and refreshment.
4. Racks and lockers for temporary storage of textbooks, valuable instruments and other materials required in medical training.

Plans for the center were announced May 4, 1961, at the annual Senior Class-Medical Alumni luncheon at the university. Dr. Leonard W. Larson, president-elect of the American Medical association and a 1952 graduate of the University of Minnesota medical school, gave the principal address.

Dr. Robert B. Howard, Dean of the University of Minnesota Medical School, shows senior medical students the plans for a new Medical Student Center to be built at the Medical School. The Minnesota Medical Alumni Association, 1700-member alumni group, has launched a $70,000 fund campaign to establish the new facility.

Dr. Sheldon M. Lagaard, Minneapolis orthopedic surgeon, is president of the Minnesota Medical Alumni association, a 1700-member alumni body affiliated with the Minnesota Alumni Association.

Campaign assistance is being given by the Minnesota Medical Foundation and the Greater University Fund, fund raising arm of the University.

MINNESOTA BLUE SHIELD

A Community of Service

Blue Shield is a community service . . . offering pre-payment
medical care protection to the citizens of Minnesota.
Blue Shield has never cancelled a contract because of age,
condition of health, or amount of benefits furnished.
Today, Minnesota Blue Shield, with more than 800,000
subscribers, covers one-fourth of the State's population.

Minnesota Medical Service, Inc.
St. Paul 14, Minnesota

Meetings and Announcements

JULY

Association of Hospital and Institution Libraries, Division of the American Library Association, Cleveland Public Auditorium, July 9-15. American Library Association, 50 E. Huron Street, Chicago 11.

AUGUST

American Association of Electromyography and Electrodiagnosis, Hotel Sheraton-Cleveland, August 27. Dr. James A. Bastron, 200 First Street, S. W., Rochester, Minn., Secretary-Treasurer.

American Congress of Physical Medicine and Rehabilitation, Sheraton-Cleveland Hotel, Cleveland, August 27 - September 1. Dorothea C. Augustin, 30 N. Michigan Ave., Chicago 2, Executive Secretary.

American Veterinary Medical Association, Sheraton Cadillac Hotel, Detroit, August 20-24. Dr. H. E. Kingman Jr., 600 S. Michigan, Chicago, Executive-Secretary.

National Medical Association, Inc., Commodore Hotel, New York City, August 7-10. Dr. John T. Givens, 1108 Church St., Norfolk, Va., Executive Secretary.

Postgraduate course in Pediatrics, August 21-25 Clinical and Research Advances in Pediatrics and Child Guidance, the Stanley Hotel, Estes Park, Colorado. For further information write: The Office of Postgraduate Medical Education, University of Colorado, 4200 East Ninth Avenue, Denver 20.

SEPTEMBER

The American College of Obstetricians and Gynecologists, September 13-14, Kansas City, Kansas; September 28-30, Atlanta, Georgia. For further information write: Mrs. Ruth Sutton, Information Counsel, 79 West Monroe Street, Chicago 3.

American College of Chest Physicians, Warwick Hotel, Philadelphia, September 25-29. Write: Mr. Murray Kornfield, 112 E. Chestnut Street, Chicago, Executive Director.

American Association of Medical Clinics, Barbizon Plaza Hotel, New York, September 27-29. Dr. Joseph B. Davis, Davis Clinic, 131 N. Washington St., Marion, Ind., Secretary-Treasurer.

Kentucky State Medical Association, Brown Hotel, Louisville, September 19-21. Mr. J. P. Sanford, 1169 Eastern Parkway, Louisville 17, Ky., Executive-Secretary.

Michigan State Medical Society, Grand Rapids, Pantlind Hotel, September 24-29. Dr. D. Bruce Wiley, 606 Townsend St., Lansing 15, Mich., Secretary-Treasurer.

American Society of Clinic Pathologists, Olympic Hotel, Seattle, September 30 - October 8. Miss Eleanor F. Larson, 445 N. Lake Shore Drive, Chicago, Manager.

The Minnesota Academy of General Practice announces its Eleventh Annual Fall Refresher to be held at Hotel Radison, Minneapolis, September 27-28.

OCTOBER

American Academy of Pediatrics, Palmer House, Chicago, October 2-5. Dr. E. H. Christopherson, 1801 Hinman Ave., Evanston, Ill., Executive Director.

American College of Chest Physicians, Sheraton Towers, Chicago, October 23-27. Write: Mr. Murray Kornfield, 112 E. Chestnut St., Chicago, Executive Director.

American Cancer Society, Biltmore Hotel, New York City, New York, October 23-24. Write: Professional Education Section, American Cancer Society, 521 West 57 Street, New York 19, New York.

The American College of Obstetricians and Gynecologists, October 10-12, Pittsburgh, Pennsylvania; October 26-27. Chicago, Illinois. For further information write: Mrs. Ruth Sutton, Information Counsel, 79 West Monroe Street, Chicago 3.

NOVEMBER

The American College of Obstetricians and Gynecologists, November 16-18, Louisville, Kentucky. For further information write: Mrs. Ruth Sutton, Information Counsel, 79 West Monroe Street, Chicago 3.

American College of Chest Physicians, Brown Palace Hotel, Denver, Colorado, July 24-28. Write: Mr. Murray Kornfield, 112 E. Chestnut St., Chicago, Executive Director.

American Medical Association, Clinical Meeting, Denver, November 27-30. Dr. F. J. L. Blasingame, 535 N. Dearborn St., Chicago 10, Executive Vice-President.

Medical Continuation Courses to be presented at the Center for Continuation Study, University of Minnesota, Minneapolis, Minnesota.

September 18-21, Pediatrics for Specialists, October 2-4, Obstetrics for Specialists, October 19-21, Dermatology for Specialists,, November 6-10, Radiology for Radiologists (Urologic Radiology) November 15-17, Opthalmology (Refraction for General Physicians November 16-18, Orthopedics for Orthopedic Surgeons (Hand Surgery).

* * *

Research Progress in Projects sponsored by the Easter Seal Research Foundation will take the spotlight at the 1961 annual convention of the National Society for Crippled Children and Adults, November 17-21 at the Denver-Hilton Hotel, Denver, Colorado.

Two projects will be reported on by the research authorities who directed them. They are a study on architectural barriers and a pilot project on a new experimental leg-ankle brace. For further information write: National Society for Crippled Children and Adults — The Easter Seal Society, 2023 West Ogden Avenue, Chicago 12.

Woman's Auxiliary

RECAP

The present membership of the Woman's Auxiliary to the Minnesota State Medical Association has risen to 2,350. This represents a net gain of 54 members over the last year.

Each individual Auxiliary member has been encouraged to participate in some way in the activities of civic organizations in her community. Auxiliary members have taken part in financial drives of Health, Welfare, Civic and Cultural organizations, and have served on the Boards of Directors of many such groups. One Auxiliary member has even promoted the formation and financing of a Girl Scout Troop to attend the European Conference in 1962.

The Pre-School Medical Survey of Vision and Hearing has progressed slowly but surely. Chambers of Commerce and Civic organizations have been contacted in all areas of the state to aid in setting up the necessary physical facilities and in contacting the parents of the children. It is hoped that the suggested two-and-one-half day training period for volunteers will be shortened and that the indoctrination program will be carried out in various areas of the state. It is hoped that more rapid progress on this program will be made during the coming months.

All members of six of our component Auxiliaries work as units as volunteers in our State Mental Hospitals. Seven Auxiliaries work in the same manner with Golden Age Clubs.

Our Auxiliary is represented on the State Board of Civil Defense, and six home preparedness awards were given to Auxiliary members.

Additionally, the Woman's Auxiliary is represented on the State Safety Council. Various Auxiliaries have taken part in Safe Water Training (in some instances in close cooperation with the Red Cross); Poison Control; Senior Citizens Safety; Traffic Safety, and Baby Sitter Training (GEMS). Additionally, slides and films on rescue breathing and safe driving have been exhibited.

For the 30th time, the Auxiliary has co-sponsored with the Minnesota Tuberculosis and Health Association and Radio Station WCCO an annual radio speaking contest for Junior and Senior High School students. The members of the Auxiliary act as judges and present the awards. This has been a very successful program, and in one school alone, 400 students participated.

Because of poor response, the promotion of the American Association of Physicians and Surgeons (AAPS) Essay Contest has been discontinued. In 1958-59, sixty essays were submitted. In 1960-61, a total of 14 essays were submitted.

In establishing a good rapport with allied organizations, the Woman's Auxiliary has been the guest of the Auxiliary to the Minnesota Pharmaceutical Association and the Minnesota Hospital Auxiliary. During the 39th State Convention we had as our guests at our Tea at the International Institute the presidents of the State Dental, Pharmaceutical, and Minnesota Hospital Auxiliaries; the Minnesota Dietetic Association, the Minnesota Nurses Association; the Director of the Radio Speaking Contest; and the Executive Secretary of the Pre-School Medical Survey of Vision and Hearing.

The Health Careers recruitment film "Helping Hands for Julie" was screened more times than any other Auxiliary program film. Many of our Auxiliary members joined with members of Hospital Auxiliaries in sponsoring Career Day teas for Junior and Senior High School students. The students attending these teas were screened by their school counselors in an effort to eliminate those not actually interested in Health Careers. Additionally, the University of Minnesota Medical School assisted in a program in which students had an opportunity to see persons engaged in their particular field of interest actually perform their jobs.

The Woman's Auxiliary this year has worked closely with the Committee on Public Health Education in the promotion and showing of the film "The Medicine Man." This film and its accompanying discussion has reached many persons and performed a great community service. This film is available, free, to

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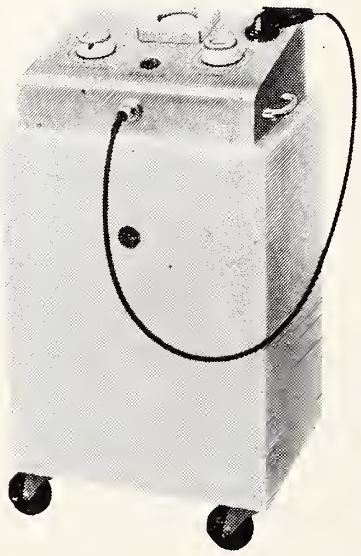

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Mrs. Arnold O. Swedson (left) and Mrs. Karl E. Johnson (center) of Duluth were among members of the Auxiliary who attended the Annual Meeting Tea at the International Institute in St. Paul on Monday, May 22. Delicacies from Denmark, Norway, Holland, Scotland, Armenia, Arabia, Ireland, Italy, Czechoslavakia, and numerous other countries, were featured at the Tea. Members of the International Institute, wearing costumes from their native lands, prepared the food and were hostesses to the Auxiliary. Pictured with Mrs. Swedson and Mrs. Johnson is Mrs. Carmen Lenze, an Institute member from St. Paul.

any group, merely by requesting it from our State Association office.

The Auxiliary's funds for scholarships were gratefully accepted this year by two medical students and one student of physical therapy. The Margaret S. Wahlquist Award was given to a student working for her MED degree—a master's degree in both nursing and education.

The Stearns-Benton Auxiliary provides a unique loan fund for student nurses of the St. Cloud Hospital. Students apply to the director of nurses at the hospital for the loan—which is made for books, a dress, a permanent wave, etc.—and there is no stipulation that the loan must be repaid. However, many student nurses after graduation reimburse this fund, which has proved a satisfaction to the students, the hospital, and to the medical auxiliary.

Two $200 scholarships were awarded by the Range Medical Auxiliary to students entering nursing careers. Applications were distributed to all Range high schools.

* * *

FALL SCHOOL OF INSTRUCTION

The Fall School of Instruction will be held on September 28, 1961, in the East Room and Solarium of the Curtis Hotel in Minneapolis.

A most interesting and valuable program is being planned. This meeting is for **all** Auxiliary members, and it should be a **must** for all County officers and all State officers and chairmen.

If at all possible, support your Auxiliary and its programs by attending this important Fall event.

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In Memoriam

FREDERICK R. HUXLEY

Doctor Federick R. Huxley, 86, Faribault physician and surgeon, died May 31, at his home after a long illness.

Doctor Huxley was a graduate of the University of Minnesota Medical School in 1900. His first job was head physician for the state school and hospital at Faribault.

He was a former president of the Southern Minnesota Medical Association, a member of the American Medical Association, and was granted Life membership in the Minnesota State Medical Association in 1950. He was also a Fifty Club member of the Minnesota State Medical Association.

Doctor Huxley was a member of Phi Delta Theta, Nu Sigma Nu, and Sigma Xi fraternities, and a member of the Masons and Elks.

He is survived by two sons.

JOHN F. HENDRICKSON

Doctor John F. Hendrickson, 89, retired Minneapolis physician, died May 15.

Doctor Hendrickson was a graduate of the University of Minnesota Medical School in 1905.

He was a member of the board at Lutheran Deaconess Hospital, and of the Hennepin County Medical Society. Doctor Hendrickson was granted a Life membership in the Minnesota State Medical Association in 1947. He was also a Fifty Club member of the Minnesota State Medical Association.

Survivors include three daughters, two brothers and seven grandchildren.

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Physician's Diary

Doctor William H. Thomas, formerly of Howard Lake and Lindstrom, joined in association with **Doctor Leonard L. Kallestad** at Wayzata recently.

* * *

Doctor Robert P. Jeub, was guest speaker at the National Convention of TOPS (Take Off Pounds Sensibly) at the Pick-Nicollet Hotel in Minneapolis recently. His topic was "The Importance of Emotions and Overweight."

* * *

Doctor Merrill D. Chesler, Minneapolis, was the guest speaker at the joint meeting of the Lyon-Lincoln Medical and Bar Associations held in Ghent, Minnesota recently. He spoke of Rehabilitation via Reconstructive Surgery.

* * *

Doctor David D. Daly, consultant in neurology in the Mayo Clinic, and **Doctor James W. Kernohan,** senior consultant in Pathology in the Mayo Clinic, will leave Rochester to join the staff of the Barrow Neurological Institute in Phoenix, Arizona. **Doctor Daly** will leave on August 15 to become chairman of the division of neurology and **Doctor Kernohan** will leave after his retirement from the Mayo Clinic on December 31, and will become chairman of the division of neuropathology.

* * *

Doctor John Lester, who has been associated with his brother at Truman, will begin practice at Mapleton. Mapleton has been without a doctor since **Doctor J. C. Vezina** was forced to give up his practice because of ill-health.

* * *

Doctor J. L. Kevern and **Doctor C. W. Lewis** attended a Seminar at Detroit Lakes recently. The course on the heart and hypnosis was given by the Academy of General Practice at the hospital in Detroit Lakes.

* * *

Doctor Thomas R. Murphy, has announced his association with the Stillwater clinic recently. **Doctor Murphy** is a diplomat of the American Board of Surgery. He will limit his practice to that of surgical diagnosis and treatment.

* * *

Doctor Mario Fischer, St. Louis County health director said that 470 persons received polio vaccinations at the Floodwood school recently.

* * *

Doctor E. P. Donatelle, Minneapolis, recently attended a meeting of more than 4,000 family doctors in Miami Beach, Florida. The occasion was the annual scientific assembly of the American Academy of General Practice.

* * *

Doctor J. F. Karn and **Doctor P. R. Hansen,** of the Ortonville Clinic are now located in their new office building; located across from the city armory and next to the Hedemark Clinic.

* * *

Doctor J. Grafton Love, head of the Neurosurgery in the Mayo Clinic and **Doctor H. J. Svien,** consultant in Neurosurgery, were re-elected to offices in the Harvey Cushing Society at its 29th Annual Meeting held recently in Mexico City.

* * *

Doctor Frank H. Krusen, director of the Kenny Rehabilitation and President of the Sister Elizabeth Kenny foundation, has been named an honorary fellow of the Royal Society of Medicine of London.

* * *

Doctor James Cain, consultant in medicine at the Mayo Clinic, left recently to accompany the party of Vice-President Johnson on a trip to southeast Asia.

* * *

Three Minneapolis physicians have been elected fellows of the American Academy of Pediatrics. They are: **Doctor C. Sherman Hoyt, Doctor Dean J. Hempel,** and **Doctor David Bloom.**

* * *

Nineteen fellows and residents of the Mayo Foundation received awards recently.

* * *

Doctor D. Richard Jones, a fellow in pathology, and **Doctor J. O. C. Eigler,** a fellow in internal medicine, received awards for meritorious research.

* * *

Doctor Morris H. Rivers, fellow in neurosurgery, received the Winchell McK. Craig award for outstanding performance as a fellow in his field.

* * *

Doctor James C. Rex, first assistant in surgery, was given the E. Starr Judd award for an outstanding surgical research thesis.

* * *

Doctor Donald B. Hunton, assistant to the staff in internal medicine, received the J. Arnold Bargen award for excellent research in gastroenterology.

* * *

Doctor James R. Stewart, fellow in roentgenology, was awarded the Russell Carman fellowship created to honor the fellow in radiology who displays outstanding ability which promises continued future development and usefulness.

* * *

Doctor Donald C. McIlrath, first assistant in surgery, was honored for special achievement in surgery with the H. K. Gray travel award.

* * *

Doctor Robert H. Balme, senior fellow in plastic surgery, **Doctor Ara V. Doumanian,** research assistant in surgical research; **Doctor Venard R. Kinney,** fellow in internal medicine on leave of absence; **Doctor Richard J. Cheesman,** first assistant in internal medicine; and **Doctor Leslie J. Schoenfield,** fellow in internal medicine, received the Herschel V. Jones awards for superior ability in medical science.

* * *

Doctor E. J. Walter Bowie, assistant to the staff in internal medicine, received the Judson Daland travel award for special achievement as a fellow in internal medicine.

* * *

Doctor Byron L. Riggs, Jr., fellow in internal medicine, received the Postgraduate travel award for high achievement in internal medicine.

* * *

Doctor Emilio R. Guiliani, assistant to the staff in internal medicine, received the A. Ashley Rousuch award for excellence as a fellow in internal medicine.

* * *

Doctor William M. Michener, senior fellow in pediatrics; **Doctor D. B. McGill,** first assistant in internal medicine; **Doctor Robert W. M. Frater,** first assistant in surgery; and **Doctor D. Thane Cody,** senior fellow in otolaryngology, received awards from the Edward John Noble Foundation for the display and development of leadership.

Trademarked drugs . . . or "drugs anonymous"?

In the field of medicine, as almost everywhere else in a free economy, the trademark concept has evolved over the years. As with most human institutions, there are some who may not consider it ideal; but it has brought about three signal benefits:

> To the physician it gives assurance of quality in the drugs he prescribes—assurance backed by the biggest asset of the maker, his reputation.
>
> To the manufacturer it gives one of the greatest possible incentives to produce new and better curative agents.
>
> To the pharmacist it gives preparations which he can dispense with confidence.

If trademarks are done away with, a whole new setup must be created:

1. An enormously expanded, expensive system of government quality control.
2. A new system of generic nomenclature which would magically turn out names not only rememberably simple, but also conforming to the principles of complex chemical terminology.
3. Something new to fill the gap left by the elimination of the trademark incentive to produce new and better drugs.

The American system has been pre-eminent in producing and distributing good medicines. Above all it has been successful in creating new advances in therapy. In a dubious effort to provide cheaper medicines by abolishing the trade names upon which the responsible makers stake their reputations, let us beware of sacrificing this success.

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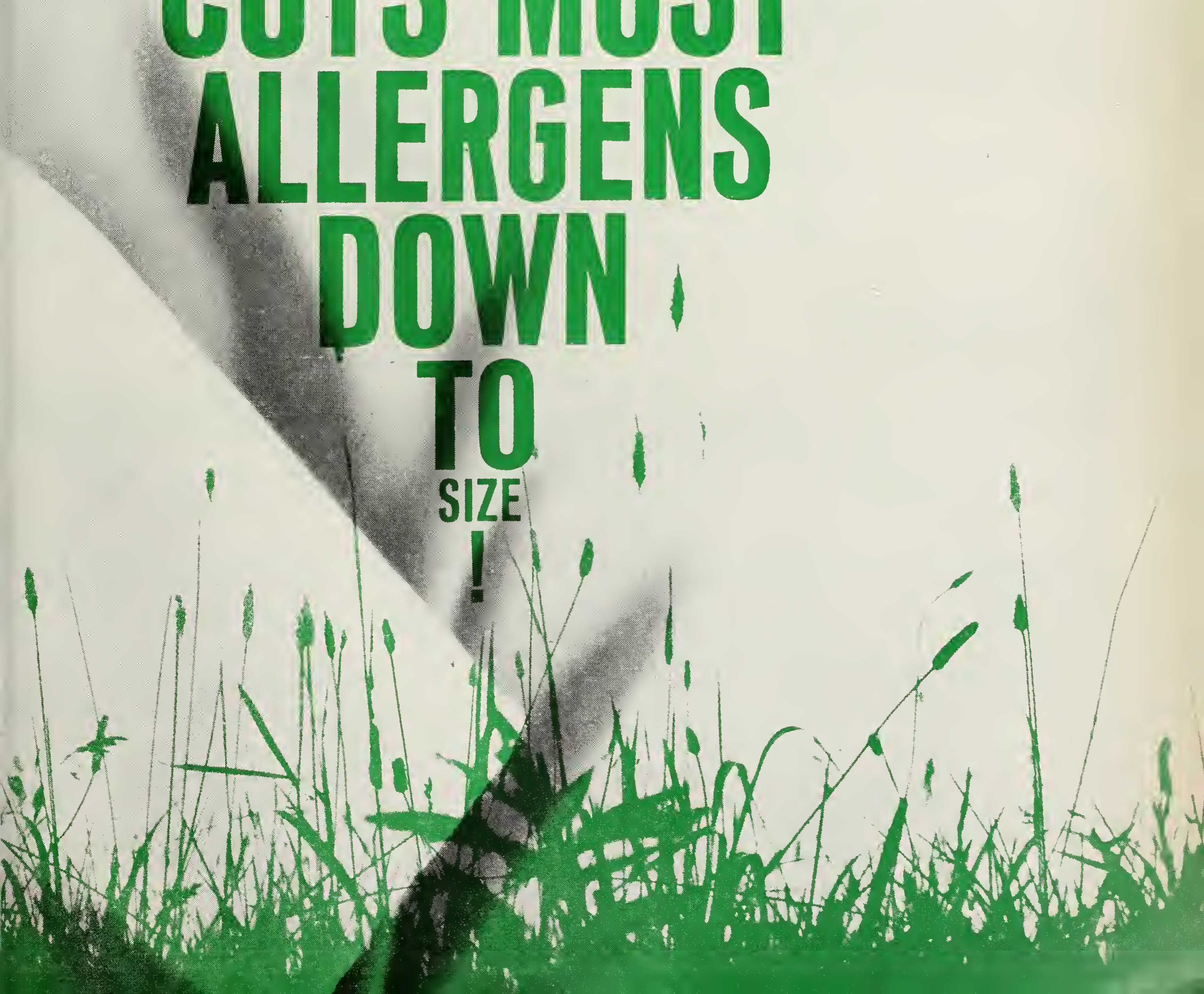

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Contents for

SCIENTIFIC ARTICLES

ORIGINAL CONTRIBUTIONS

Therapy of Cystic Fibrosis of the Pancreas

Albert J. Schroeder, M. D., Minneapolis, Minnesota 307

Congenital Aortic Stenosis

Franklin DeRusso and Mark May, M. D.

Philadelphia, Pennsylvania 313

Anal Surgery in Infants and Children

Loren E. Nelson, M. D., St. Paul, Minnesota 326

Giant Ovarian Cyst

Arthur E. Davis, Jr., M. D., St. Cloud, Minnesota 330

Camp Needlepoint—Minnesota's Camp for Diabetic Children

Donnell D. Etzwiler, M. D., St. Louis Park, Minnesota 335

ABSTRACTS AND BRIEFS 339

BOOK REVIEWS 341

Minnesota
Medicine
Represents

Duluth Surgical Society
Minneapolis Academy of Medicine
Minneapolis Obstet. and Gynecol. Soc.
Minneapolis Surgical Society
Minnesota Academy of Medicine

Minn. Acad. of Occup. Med. and Surg.
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Minnesota Academy of Ophthalmology
and Oto-Laryngology
Minn. Society of Clinical Pathology

Medicine

August, 1961

Volume 44
Number 8

MISCELLANEOUS ARTICLES

EDITORIALS

Electrophoresis
Horace H. Zinneman, M. D., Minneapolis, Minn. 345

A Pediatrician Looks at Child Psychiatry
Max Seham, M. D., Minneapolis, Minn. 346

Post-Graduate Education in the Voluntary Non-Profit Hospital
Lyle J. Hay, M. D. and Reuben Berman, M. D.
Minneapolis, Minn. 349

PRESIDENT'S LETTER 343

A. M. A.: MEETING EVENTS AND ACTIONS REPORTED 351

A. M. A.: DRUG HEARING 355

THE ART OF MEDICINE 357

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS A-37

MEETINGS AND ANNOUNCEMENTS A-38

WOMAN'S AUXILIARY A-41

IN MEMORIAM A-43

PHYSICIAN'S DIARY A-45

CLASSIFIED ADVERTISING A-48

INDEX TO ADVERTISERS A-50

Minn. Society of Internal Medicine
Minn. Society of Neurol. & Psych.
Minn. State Med. Association
Minnesota Surgical Society

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Bibliographical references should appear on a separate sheet entitled References. They should appear and be numbered consecutively in the order in which they first occur in the text (not alphabetically). Citations in the text require reference numbers if the author's or authors' names are not used or if there is more than one reference to the same author or group of authors. All references to author should be included which are not in the text. The style and exact punctuation used in the J.A.M.A. references are requested. Journal references should include: Author's last name, initial, initial.; title of paper. Abbreviated name of journal, volume number page, year. Book references should give author, title, edition number, city, publisher and year.

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Therapy of CYSTIC FIBROSIS of the PANCREAS

Present day concepts of the pathologic physiology of Cystic Fibrosis of the Pancreas carries the managing physician well beyond the care of the gastrointestinal malabsorption syndrome. In fact the key to successful care is more in the respiratory than in the GI tract. Diet, vitamins and oral pancreatic replacements are important; antibiotics and expectorants are needed, but the vigorous use of inhalation therapy is basic to clinical success.

ALBERT J. SCHROEDER, M.D.
Minneapolis, Minnesota

A SURVEY by the Children's Bureau of the United States Public Health Service (1) indicates that cystic fibrosis must be considered a serious public health menace and as a cause of mortality in children, outweighs such diseases as rheumatic fever, diabetes, and poliomyelitis.

This disease, described by Fanconi in 1936, occurs with an estimated incidence of 1 in 2500 live births. While the basic defect in cystic fibrosis remains unknown, there is general agreement that it is a familial disease displaying the characteristics of a Mendelian recessive gene. Thus, in an affected family, the disease may occur in 1 of 4 offspring. Both the parents must be carriers of the recessive trait and two-thirds of the non-affected children are also carriers. (2)

In 1938 a series of reports Anderson (3), Blackfan and May (4), and Harper (5) described and documented the existence of this disease entity. Since then a number of descriptive names have been attached to the disease including cystic fibrosis, congenital steatorrhea, mucoviscidosis, and fibrocystic disease of the pancreas. In light of recent knowledge, none of these names are completely adequate. In this discussion I will refer to the disease using the term cystic fibrosis.

In the past, primary attention has been directed to the existence of the pancreatic enzyme deficiencies and the resultant intestinal malabsorption syndrome. Presently one must think of

---

Presented before Northwest Pediatric Society, Bayport, Minnesota, September 23, 1960.

cystic fibrosis as a general disturbance of exocrine glands located in the pancreas, skin, tear glands, salivary glands, and the tracheo-bronchial mucosa.*

The Diet

A deficiency of the pancreatic enzymatic secretions (trypsin, lipase, amylase, and carboxypeptidase) results in inadequate absorption and digestion of ingested food. As a result calories are lost, a protein deficiency may exist, and abnormal quantities of fat are found in the stool. The inevitable result of this malabsorption is clinically apparent in the failure of the infant and child to thrive.

Despite apparent poor growth and development, most cystic fibrosis children have an aggressive interest in food, employing quantity of food to compensate for poor quality of absorption. With increased dietary intake in conjunction with other planned therapy, a positive nitrogen balance is possible.

Although fat is poorly absorbed, no special effort is made to severely eliminate it from the diet. Parents should be cautioned to avoid excessive dietary fat. Once the disease is under satisfactory treatment, the usual fats are tolerated without undue bowel aggravation. The need for dietary control varies greatly in any one patient from time to time and between patients. As has been succinctly stated by di Sant'Agnese, "The nutritional state is more closely correlated with the severity of the pulmonary disease than with pancreatic function." (6)

Therapeutic Applications:

1. Satisfy hunger with three to five meals per day.
2. A high protein diet is prescribed with generous allowance of calories for age and optimal growth.
3. Limitation or avoidance of excessive fat (e.g., peanut butter, mayonnaise, fried foods).

Vitamins

Since fat soluble vitamins are lost in the stools, extra vitamins in a water miscible base are administered. Additional B complex may be recommended in some cases. Recently children with this disease have been shown to have a deficiency of Vitamin E and exhibit creatinuria; that is eliminated by the addition of this supplement.*

In the majority of children with cystic fibrosis coming to autopsy, biliary cirrhosis in varying degrees is demonstrated.**
This may be an important consideration in those patients going to surgery.

Therapeutic Applications:

1. Recommend twice the usual daily vitamin allowance for age.
2. Vitamin K supplement if clinical indications exist.

Pancreatic Enzymes

Several pancreatic enzyme replacements are presently available (Panteric capsules, tablets, and granules*, Viokase powder and tablets#, and Cotazym capsules±). The use of these oral pancreatic supplements materially reduces the frequency and bulk of the stool, digestion is facilitated, and absorption is increased. Cotazym is a new therapeutic addition to the pancreatic replacement enzymes and it is stated to have a fortified lipase content. Early clinical experiences with this drug indicate it is well tolerated. The author's experience has been confined to the use of Viokase in powder and tablet form.

Therapeutic Applications:

1. Viokase powder: ¼ to 1 teaspoon per meal.
2. Viokase tablets: Tablets 2-5 per meal (5 tablets equal 1 level teaspoon of powder).

   In older children tablets are preferred. It is recommended that the child chew the tablet rather than swallow it whole. Administer Viokase during the meal.

Sweat Glands

Other non-mucus producing exocrine glands, such as sweat (8), parotid (9), and tear (10) glands, show no discoverable morphologic-pathological changes but the chemical content of the secretions is abnormal. In 1953 di Sant'Agnese demonstrated that the skin sweat electrolyte concentration (NaCl) was increased in patients with cystic fibrosis. (8) This salient fact has allowed for a great simplification in establishing the diag-

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* There is considerable clinical application possible from recent knowledge of these involved gland systems.

* Although no clear clinical evidence of vitamin E deficiency is apparent, it may be well to include this vitamin with the supplement.

** Altered liver function and faulty absorption of fat-soluable vitamin K may require supplement of vitamin K to lessen a prothrombin deficiency.

*Parke Davis Company
#Viobin Corporation
+Organon Incorporated

nosis by way of sweat collection. With the single exception of untreated adrenal insufficiency, no other disease entity is known producing such changes in sweat electrolytes.

It has been repeatedly observed that cystic fibrosis patients are particularly susceptible to heat prostration during hot weather. (11) (12) The addition of salt to the food in adequate amounts (2 grams or more per day) is necessary. Providing the older child with free use of the salt shaker usually solves this problem. Parents must be particularly cautioned not to overdress these infants in summer or winter. Likewise the physician must be aware of the increased hazard of heat prostration and heat stroke in performing diagnostic sweat tests. (13)

Therapeutic Applications:

1. Extra salt supplement, particularly in hot weather.

Respiratory Tract

The majority of cystic fibrosis patients have pulmonary involvement which dominates their disease process and upon which hinges their fate. More than 90% of the deaths are due to progressive chronic pulmonary disease (6). Initially the physician's encounter with the patient may be with pneumonia and here vigorous inhospital treatment may be necessary. Although bacterial identification with sensitivity study of pulmonary pathogens is ideal and occasionally therapeutically helpful, the majority of patients harbour mixed pathogens including staphlycoccus aureus hemolyticus and/or pseudomonas. Shwachman states, "We have been repeatedly disappointed in trying to decide which antibiotic to use on the basis of sensitivity tests on organisms isolated from the nasopharynx." (14).

A. Oral Antibodies:

Practically speaking, if the pulmonary infection is mild or under control, it may be possible to carry these children with small daily doses of oral antibiotic, (e.g., chlortetracycline). In summer months with a respite from respiratory infection, it is often possible to eliminate antibiotics.

If pulmonary involvement is more extensive, increased daily dosage of antibiotic may be necessary. Various combinations of antibiotics may be successfully used but their need must be a matter of individual physician judgement based on severity of the infection and extent of the disease. Combinations as outlined by Schwachman such as chlortetracycline, erythromycin and sulfonamide, or chloramphenical and erythromycin may be necessary in extensive pulmonary involvement. Careful observation of the patient's progress and physical findings along with pulmonary x-rays, erythrocyte sedimentation rates, and white blood counts guide one's decision as to the extent of use of antibiotics.

Therapeutic Applications:

1. Mild pulmonary involvement:
   Daily oral antibiotic, (e.g. chlortetracycline)
2. Extensive pulmonary involvement:
   Daily intensive oral antibiotic
   Singly
      chlortetracycline
      erythromycin
      chloramphenicol
   Combination
      chlortetracycline and erythromycin
      chloramphenicol and erythromycin

Expectorants:

It has long been known that the tracheobronchial mucus from cystic fibrosis patients is abnormal. Recent work by a number of investigators has further delineated the abnormalities (15). One of the most important variations in this mucus concerns its viscosity. Denton (16) has demonstrated that cystic fibrosis tracheobronchial mucus may be 5 to 100 times the viscosity of mucus from controls with bronchitis. It would appear its elasticity is also increased.

Expectorants have a place in the therapy of the cystic fibrosis patient. The cough performs the useful purpose of moving the secretions up the tracheobronchial tree. Stimulant expectorants tend to decrease secretions and should not be used (e.g. Terpin hydrate). Although parents often ask for agents to suppress the cough, these obviously should be avoided.

Expectorants with mucolytic action perform a useful purpose in thinning the viscid tracheobronchial secretions. A saturated solution of potassium iodide is a very useful expectorant. Recently some experience has been gained with Organdin*, a form of iodinated glycerol (drops, tablets, and elixir.) Besides possessing satisfactory mucolytic properties, it contains less iodine, is well accepted and better tolerated.

Therapeutic Applications:

1. Saturated solution Potassium Iodide —
   5 to 10 drops three to four times daily
2. Organidin drops —
   3 to 5 drops three or four times daily

Inhalation (aerosol) Therapy:

Since the greatest morbidity and mortality in cystic fibrosis is due to pulmonary involvement, the clinical attack is further vigorously directed to this area via the use of aerosol therapy. Inhalation therapy is a most useful and valuable clinical technique which effectively combats pulmonary obstruction and infection. The viscid tracheobronchial secretions in effect paralyze the ciliary action, mucus accumulates, obstruction of the smaller pulmonary radicles occurs, and the inevitable infection ensues. The resultant air exchange is deficient and the respiratory rate is increased. The accumulations of mucus result in exhausting fits of deep productive coughing . Chronic dyspnea, emphysema, and cyanosis are followed by deformities of the chest wall and clubbing of the fingers and toes.

Aerosol therapy is most effective in thinning the mucus and thus aiding in its mobilization. This makes the pulmonary infection easier to treat and aerosol provides an excellent vehicle to carry antibiotics to the site of the infection. In all but the mildest cases the use of aerosol is of major importance in the therapy of fibrocystic disease.

Aerosol "Day Solution"

The objectives of aerosol therapy are: 1) to deliver a fluid medium in amount and kind sufficient to liquefy the abnormal secretions and 2) to deliver topical agents to the entire tracheobronchial tree. The following aerosol solution, with various modifications, has been used in several clinics (17). It is termed "Day Solution" and is used for intermittent aerosol therapy either alone or as a vehicle for various agents and antibiotics.

Propylene Glycol	12.
Glycerin	5.
*Neosynephrine	0.05
Acetic acid 1%	1.
Distilled water q.s.	add 100.

Propylene glycol acts to reduce the vapor pressure of the aerosol solution and prolongs the life of the droplet. It also has a bacteriostatic effect (17).

Glycerin is used in the aerosol to delay the rate of evaporation of the solution and aid in maintaining stable particle size (17).

Vasoconstrictors are added for their local effect in lessening mucosal edema which is a consistent finding in the chronically involved bronchial tree of the cystic fibrosis patient. Neosynephrine is preferred because of prompt effect with few side reactions.

An *acid aerosol* solution is desirable to discourage pseudonomas, a commonly present complication in the lung secretions of these children. The aerosol solution may be buffered to pH 4.5 by the addition of acetic acid. The therapy may call for one to three daily inhalation treatments using 4. cc of "Day Solution" in a nebulizing unit. Ordinarily this will take from 20 to 30 minutes to be accomplished.

Antibiotics by Inhalation Route

Antibiotics delivered to the infected pulmonary site via inhalation therapy are most effective in the more severely involved cases. This may be administered two or three times daily. Crystalline penicillin and streptomycin have been used singly and in combination with very satisfactory results.

Dosage: Penicillin crystalline 50,000-100,000 U per treatment
and/or
Streptomycin 50-100 mg, per treatment

The above are dissolved in distilled water so that the required dose is contained in 1 cc. of diluent. This is added to 4 cc. of aerosol "Day Solution" and nebulized via the aerosol nebulization unit. Since the lungs may act as a depot for streptomycin (17), it is recommended that intermittent streptomycin therapy be used: e.g. 10 to 14 days on, and 7 days off.

Recently the writer has favored neomycin sulfate in preference to the above for two reasons: a) it is more effective in combating staphylococcus aureus which is so commonly present, and b) purchased in bulk powder form, it can now be dispensed quite reasonably which in sterile vial form was not the case.

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*Wampole Laboratories

*May use neosynephrine 1%, using 5. cc

Dosage: Neomycin sulfate 50-100 mg per treatment

The above is made up so that the required dose is contained in 1 cc. of distilled water. This is added to 4 cc. of aerosol "Day Solution" and administered via the aerosol nebulizing unit one to three time daily as indicated. For special circumstances where resistant flora are encountered, other aerosol antibiotics have been successfully used.

Dosage: Bacitracin 20,000-50,000 U per treatment
Polymixin 5 mg. per treatment

Aerosol "Night Solution"

In cases having advanced pulmonary involvement one may recommend prolonged night time use of other special aerosol solutions. This may be used from the child's bedtime to midnight or even all night and is accomplished by having the child sleep in a special plastic hood or tent in which the proper nebulizing unit is placed. Denton (16) has found that the prolonged use of a .5 molar NaCl aerosol solution effectively reduces the viscosity of the abnormal mucus in cystic fibrosis. He suggested the theory that the high viscosity of mucus in cystic fibrosis is due to the decreased concentration of sodium ions in the structure of the mucus molecule. The following is the formula for Denton's night "solution" for prolonged administration:

Propylene Glycol		120.
NaCl		29.
Distilled water	q.s. ad	1000.

This solution is placed in the nebulizing unit and is used in the tent for a prolonged period of time.

Thus in the severe advanced case intermittent aerosol "Day Solution" may be given 3-5 times during the day and the patient may in addition sleep in a tent for continuous night time aerosol therapy using the "Night Solution."

Aerosol Equipment

The proper equipment is all important as the effectiveness of the aerosol depends on achieving droplet size of one to four microns in diameter (RBC=5-7 microns). Droplets of 30 microns or larger are baffled out in the trachea, droplets of 10-30 microns reach the terminal bronchus, droplets of 3-10 microns reach the alveolar ducts and only droplets of 0.5 to 3 microns reach the alveolar sacs (18).

It should be remembered that the choice of equipment must be tempered by the fact that this is to be used primarily in the home and only occasionally in the hospital. Thus one needs to choose equipment that is portable, economically within the reach of the patient, durable, technically efficient in meeting the requirements of aerosol particle size, and designed for the pediatric patient. A most satisfactory home unit with necessary ancilary equipment (compressor, mask with expiratory valve, nebulizers, tent, etc.) is available.*

Physiotherapy:

There is an awareness of the value of postural pulmonary drainage in these patients. The parents are shown how to make a padded "drainage board" and are given specific directions on using techniques of vibration and clapping of the chest wall to facilitate drainage of the specific lobes of the lung. Simple physiotherapy techniques for increasing pulmonary excursion with breathing exercises are detailed to the patient.

Conclusion

The management of infants and children having severe cystic fibrosis of the pancreas is no longer confined to the gastro-intestinal malabsorption syndrome. Diet, vitamins, and oral pancratic replacement are not enough. Expectorants and antibiotic are necessary; and inhalation treatment is basic to satisfactory pulmonary control. A vigorous therapeutic attack on the pulmonary problem with its abnormal mucus, infection, and obstruction is imperative.

While the final answer for the eradication and/or the management of this disease is not yet available, the present therapeutic armamentarium allows a considerably more optimistic outlook than was previously thought attainable.

The majority of children with cystic fibrosis are managed at home with only infrequent visits to the hospital, attend school regularly, and are able to indulge in a surprising amount of normal childhood activity.

PROGRAM FOR CHILDREN WITH CYSTIC FIBROSIS

Consultation service will be provided, or a request for consultation can be made by writing Crippled Children's Service of the Department of Public Welfare, St. Paul 1, Minnesota.

This service will be provided for children whose parents cannot provide the necessary care.

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*Mist O_2 Gen Equipment Company, 2711 Adeline Street, Oakland 7, California

References on Page 329

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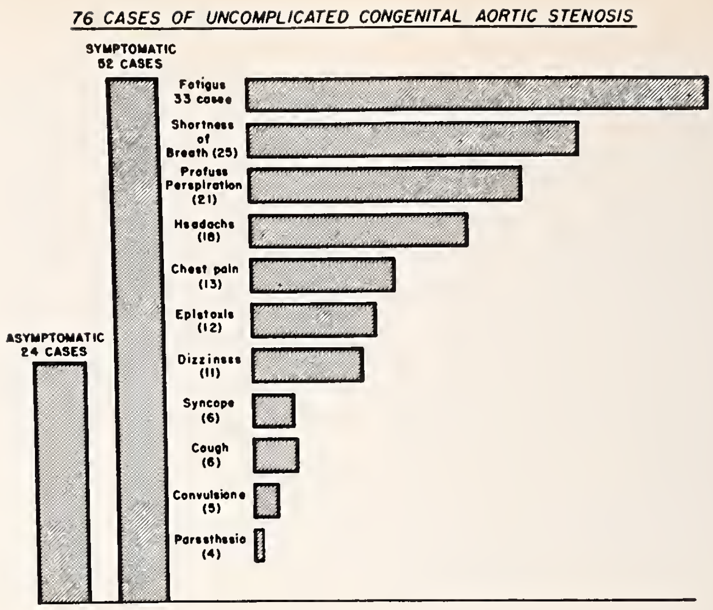

Congenital Aortic Stenosis

A Study of 100 Cases

Until relatively few years ago, reports on isolated cases or on small series of cases of congenital aortic stenosis led to the impression that this anomaly is uncommon. More recently, the accounts of rather large numbers of patients seen by individuals or groups interested in congenital heart disease(1-7) have given evidence that it is a rather commonly-encountered defect.

In this paper, we are presenting the results of a study of 100 individuals in whom the diagnosis of congenital aortic stenosis, with or without an accompanying cardiovascular defect, could be made. Our purpose is twofold: To outline the natural history of the malformation and to suggest the criteria for operation. We confess at the outset that the accomplishment of neither aim is attained. Although the careful observations of a single individual in 100 patients gives some idea as to the natural history, many of these must have been seen only once or a few times, only a small number could have been followed over a period of several

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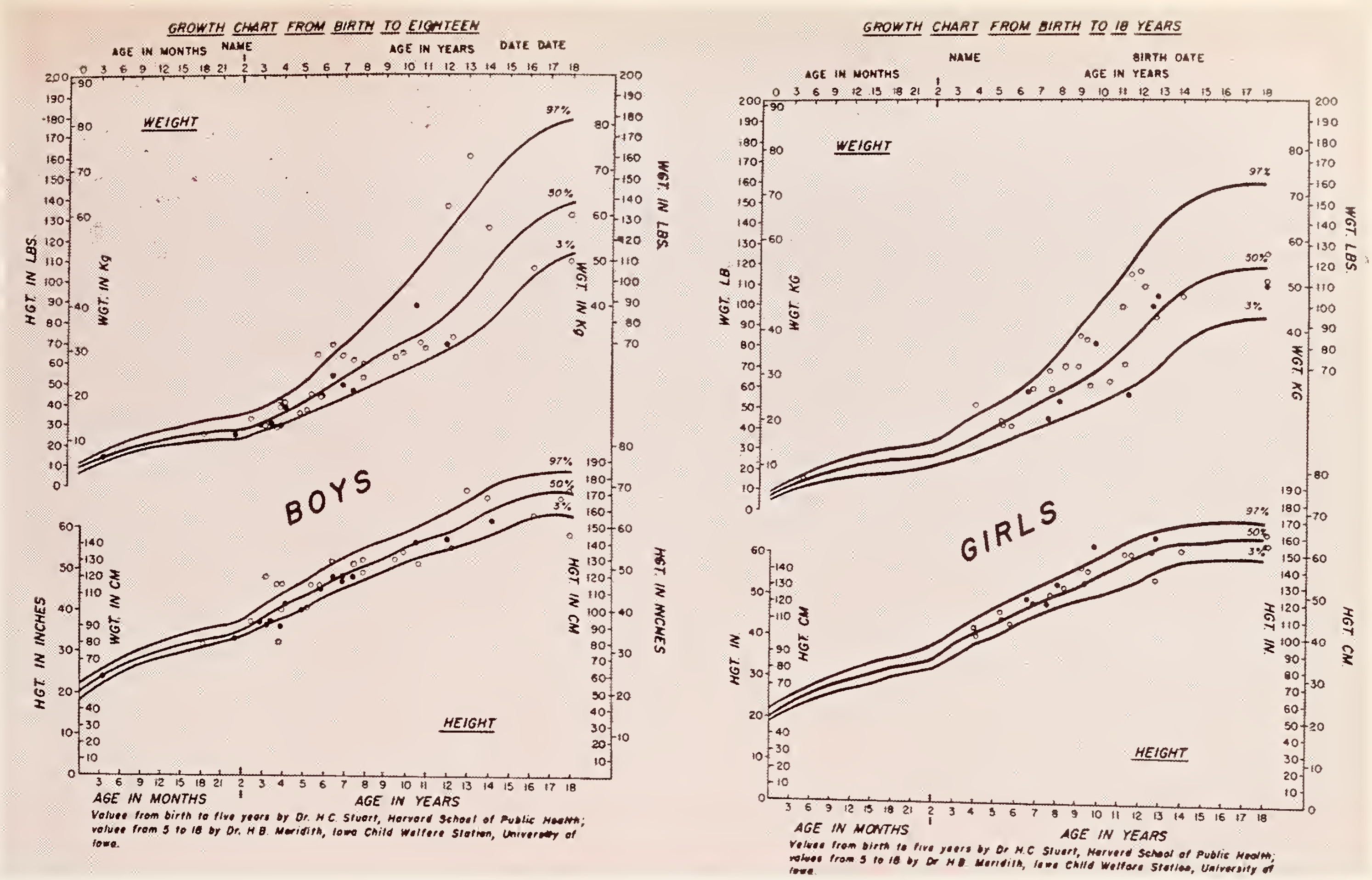
*From The Pediatric Cardiology Service, Department of Pediatrics, Hahnemann Medical College and Hospital. The cases under study were obtained from the private files of Daniel F. Downing, M. D., of the Department of Pediatric Cardiology, Hahnemann Medical College and Hospital of Philadelphia.



Values from birth to five years by Dr. H.C. Stuart, Harvard School of Public Health; values from 5 to 18 by Dr. H.B. Meridith, Iowa Child Welfare Station, University of Iowa.

Values from birth to five years by Dr. H.C. Stuart, Harvard School of Public Health; values from 5 to 18 by Dr. H.B. Meridith, Iowa Child Welfare Station, University of Iowa.

Fig. 1: Growth not affected by aortic stenosis
°—Pure aortic stenosis
°—Aortic stenosis complicated by associated lesion(s)

This paper reviews a study of 100 cases of congenital aortic stenosis. The natural history, symptoms, physical findings and other diagnostic aids are discussed. Since this lesion is not uncommon and carries the threat of sudden death, early diagnosis is emphasized. A surgical treatment which has a low mortality is available for indicated cases. This lesion can be diagnosed early and is surgically correctable should the life of the individual be threatened.

years, and none could have been observed through a significant portion of an ordinary lifetime. Possessing only incomplete knowledge of the natural history, the criteria for operation must be considered extremely tentative.

Patient Material

The 100 patients were gathered in random fashion from among the 152 individuals with congenital aortic stenosis in the files of the Pediatric Cardiology Service at this institution. In all, the diagnosis had been established during life. Right heart catheterization had been performed in 81, and combined left and right heart catheterization in 4. Thirty-six patients were subjected to operation: Atrioseptopexy in 1; excision of a coarcted aorta in 1; transection of a patent ductus and aortic commissurotomy in 1; transection of a patent ductus, excision of a coarcted aorta and aortic commissurotomy in 3; and aortic commissurotomy in 30. Two patients were operated twice. One had a post-ductal aortic coarctation excised, and 2 years later underwent an aortic commissurotomy. Another had an aortic commissurotomy via the transventricular route and 4 years later another aortic commissurotomy by direct vision. Two patients who died without surgery were studied at autopsy.

Results

Age. The range was from 4 months to 39 years (Table I). In only 3 was the diagnosis made during the first year; in only 10 under the age of 4. Sixty-nine patients were between 4 and 12 years, 21 beyond 12 years.

Sex. There were 62 males and 38 females, a ratio of 1:1.6.

Race. Ninety-five patients were white, 5 Negro. This is the approximate ratio of white to Negro in the total number of patients studied on this Service.

Ordinal Number in Family. Record was made in 80 individuals. Twenty-eight were firstborn; 9, third; 9, fourth; 2, fifth; 2, sixth; 3, seventh; 1, eleventh. This distribution appears to be without significance.

Abnormalities of Pregnancy. Information as to the period of gestation was available in 74. It was uneventful in 27. The most common abnormality was the combination of nausea and vomiting, occurring in 31. Vaginal bleeding in the first trimester was noted in eight. One mother had been exposed to "measles" in the first trimester, but had shown no evidence of the disease.

Birth Weight. Some degree of prematurity was recorded in 8%, a figure of no significance.

Growth and Development. Weight gain was considered to have been slow in infancy in 11 patients, 6 of whom had additional cardiac or vascular defects. Six were abnormally slow in sitting up and walking. Four of these had complicated defects. Growth was studied by plotting, on a modified growth chart (Figure 1), the heights and weights obtained each time the patient was examined. The heights and weights that fell between 97 and 3 percentile were considered normal, and retarded if below 3 percentile. Congenital aortic stenosis did not seem to affect growth. One hundred and forty-four values were plotted: 6% were retarded, 8% were over 97 percentile, and 86% were between 97 and 3 percentile.

Other Congenital Anomalies. Five patients had congenital anomalies of other organ systems: Cleft palate and hare lip, hemangioma of the ear, esophageal cyst, meconium ileus and malformed kidney.

Age of Parents. The age of parents at the time of conception of the patients was without significance, the average age of mothers being 27 years; of fathers, 31 years.

Family History. There were 2 patients with close relatives who had congenital heart disease—one a sibling with a cyanotic lesion, the other a son with a congenital aortic stenosis. In five families, there were noncardiac congenital malformations. Diabetes was present in 23 families.

Age Murmur Discovered. In 94 patients, the age at which a cardiac murmur was discovered was established. It was after 1 year in 54%, usually between the second and tenth years. The greatest number of any single age was 21, this being in the neonatal period. The murmurs of complicated lesions tended to be heard earlier than that of pure stenosis—before 1 year in 61% of the former, in 41% of the latter. Sixty-two percent of the individuals in whom the murmur was discovered during the neonatal period required operation or died.

Symptoms. Forty-six patients were considered to be asymptomatic. The most common complaint was fatigue in 51 patients, followed by shortness of breath in 41, and increased perspiration in 31. Pain or discomfort localized in the chest was present in 17. Nine described this as a sensation of tightness across the anterior thorax, 7 as real precordial pain. It was always transient and did not radiate. The seventh patient, a child, awoke on one occasion crying and grasping his chest; the episode lasted 4 hours. Severe, frequent epistaxis occurred in 4; in 1, carotid ligation was necessary. Cyanosis was reported in 7; in 3 it was noted during episodes of congestive failure; in two during syncope; in 1 during the course of a convulsive seizure. One individual had chronic cyanosis and was found to have diffuse interstitial pulmonary fibrosis by lung biopsy. Syncopal episodes had occurred in 8. Six patients had had convulsive seizures. Dizziness was a complaint in 16. Marked irritability and other personality disorders were present in 3. Six patients complained of a persistent cough. A tingling numbness in the lower extremities was present in 4 patients. Figure 2 shows the frequency of symptoms in patients with pure aortic stenosis.

TABLE I

AGE AT WHICH DIAGNOSIS WAS ESTABLISHED & SUBSEQUENT FATE OF PATIENTS

Age	P	C	PO	CO	P*	C*	C*A	CO*A	PO*	CO*	Total	
4 mo.	1										1	)
5 mo.	1										1	)
6 mo.			1								1	) 10
2 yr.	2	1		1							4	)
3	2		1								3	)
4	7	2	3	1							13	)
5	8			1							9	)
6	4	1	1								6	)
7	6		1	2							9	)
8	4	1	1	1	1		1	1			10	) 69
9	3	1					1				5	)
10	3	1		1							5	)
11	2	1	2								5	)
12	4	1	1	1							7	)
13	2										2	)
14			2	1							3	)
15			1								1	)
16			3								3	)
18	1								1		2	)
19			1	1							2	)
20			1							1	2	) 21
28			1							1	2	)
31			1								1	)
34			1								1	)
36	1										1	)
39			1								1	)
Total	51	9	23	10	1	0	2	1	1	2	100	

Age: At time of diagnosis
P — Pure aortic stenosis
C — Aortic stenosis complicated by associated defect(s)
O — Operated
* — Died
A — Autopsy

Physical Findings

Development. Only 5 patients were noted to be poorly developed. Two of these had complicated defects. As can be seen in Figure 1, the anomaly cannot be said to affect growth significantly.

Nevi. Multiple brown nevi over the thorax were found in 8 patients. These were not looked for in the early years, and probably the incidence was higher. According to Downing (5), this phenomenon is rather common in patients with anomalies of the aortic valve and aortic arch.

Abnormal Cervical Vessel Pulsation. Abnormally vigorous carotid pulsations were visible in 5. Two had pure stenosis, 3 had complicated lesions.

Thoracic Asymmetry. The left anterior chest was unduly prominent in 8. The sternum protruded in 2 and the right anterior chest bulged in 1. Eight of these 10 had associated cardiovascular defects.

Cardiac Enlargement. Thirteen patients had enlarged hearts as determined by percussion or point of maximum apical impulse. All but 1 of these showed electrocardiographic evidence of left ventricular hypertrophy. Six had coarctation of the aorta in addition to aortic stenosis.

Thrill. A systolic thrill was palpated in 59 individuals, usually in the right second and third interspaces and frequently at the base of the neck and in the suprasternal notch. In 1 patient, it was most prominent over the xiphoid.

Cardiac Rate. Some degree of tachycardia was found in almost all patients. Bradycardia was present in a few.

Second Heart Sound. The second sound in the aortic area was normal in 69, faint in 20, and accentuated in 11. In the pulmonic area it was normal in 70, faint in 8, and accentuated in 22.

Systolic Murmur. On initial examination, a systolic murmur was best heard in the right second and third interspaces in 66, the right and left second and third interspaces in 18, along the left sternal border in 15, and at the xiphoid in 1. In these last 16, there was a shift in the location as the years passed, in each, the murmur becoming most prominent in the right second and third interspace. Transmission was generally to the neck, frequently along both sternal borders and posteriorly. It was described

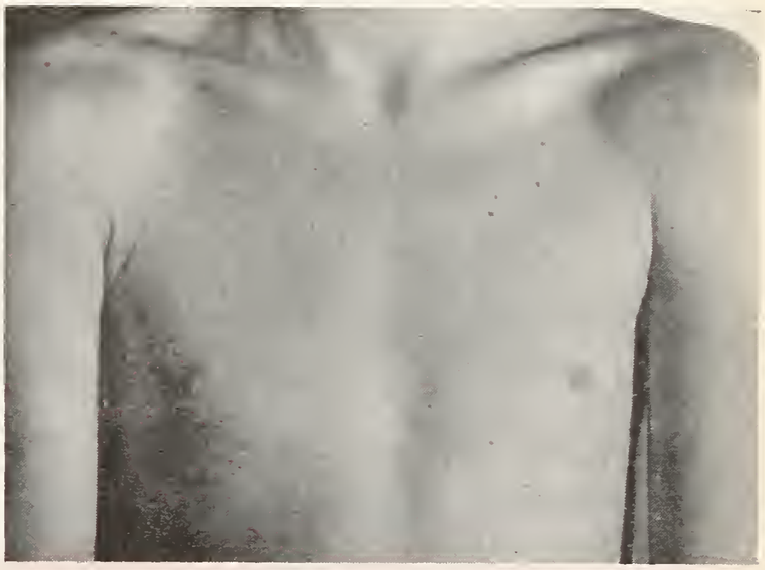


Fig. 3: Brown nevi over chest and abdomen seen in aortic lesions.

TABLE III—Part I

TRANSVENTRICULAR COMMISSUROTOMY

Patient, Age, No.	Preoperative	Operative	Postoperative	
	Clinical Features	Findings	Clinical Features	Follow-Up
L. G. 6:7 #21	Fatigue. Loud blowing systolic murmur over aortic area. B.P.: 104/60 (Direct). Systolic Gradient: 20 mm.Hg.	Thrill over aorta. Fused aortic commissures. Valvular obstruction.	Thrill decreased in intensity. Systolic Gradient: 5 mm.Hg.	1 day—Atelectasis. 1 year—Significant improvement, roller skating, folk dancing. Murmur unchanged. B.P.: 96/54 (Indirect)
N. P. 19:0 #29	Fatigue. Harsh systolic and blowing diastolic murmur over aortic area. B.P.: 110/80 (Indirect) Systolic Gradient: 90 mm.Hg.	Systolic thrill over pulmonary artery and aorta. Aneurysml dilatation of main pulmonary artery. Patent ductus transected. Valvular obstruction.	Thrill diminished. B.P.: 150/75 (Direct) Systolic Gradient: 50 mm.Hg.	Systolic and diastolic murmurs unchanged.
W. M. 20:0 #31	Fatigue. Shortness of breath, hemoptysis, epistaxis. B.P.: 130/60 (Indirect) Systolic Gradient: 120 mm.Hg.	Thrill over aorta and pulmonary artery. Air embolism developed in right ventricle. Valvular obstruction.		6 days—Patient expired.
J. W. 0:0 #42	Shortness of breath Diastolic murmur.	Diastolic and systolic thrill over aorta. Valvular obstruction.		
M. B. 7:6 #64	Fatigue, headache, chest pain, dizziness, paresthesias. B.P.: 80/58 (Direct).	Systolic thrill over aorta and pulmonary artery. Patent ductus transected. Coarcted aorta (postductal) excised. Valvular obstruction.	Thrill diminished, diffuse.	2 days—Thrombophlebitis. 1 year—Asymptomatic, marked improvement.
R. C. 10:8 #74	Fatigue, profuse perspiration, syncope, epistaxis, chest pain. B.P.: 90/60 (Direct)	Thrill over aorta with visible jet impulse. After procedure, thrill diminished and diffuse. Valvular obstruction.	Symptoms diminished. No chest pain. B.P.: 110/70 (Indirect) Systolic thrill and murmur diminished.	
R. C. 10:0 #75	Fatigue, shortness of breath, chest pain. Abnormal EEG B.P.: 70/55 (Direct)	Thrill present over aorta. After procedure, thrill diminished and diffuse. Valvular obstruction.	No chest pain or shortness of breath. Normal EEG. B.P.: 120/70 (Indirect) Systolic thrill and murmur decreased.	1 year—Exercise tolerance increased. 2 years, 3 months—Systolic Gradient was 33 mm.Hg.
D. H. 18:0 #77	Fatigue, shortness of breath, epistaxis. B.P.: 100/60 (Direct) Systolic Gradient: 140 mm.Hg.	Thrill noted over aorta. Small "goose-quill" opening in aortic valves.	Systolic murmur and thrill decreased. Diastolic murmur present. B.P.: 100/66 (Direct) Systolic Gradient: 100 mm.Hg.	
L. P. 3:2 #78	Fatigue, shortness of breath, convulsion, cough, paresthesas of lower extremities, irritability and poor sleeping habits. B.P.: 80/60 (Direct)	Thrill and jet impulse noted over aorta. After procedure, jet impulse disappeared, thrill diminished and diffuse. Valvular obstruction.	Activity increased. No shortness of breath. No chest pain. Improvement in personality and sleeping habits. Thrill decreased and diffuse. Systolic murmur diminished.	1 year—Asymptomatic. 4 years—Severe symptoms. B P.: 72/40. Reoperated (See Table IV, Direct Vision).
M. C. 16:0 #85	Fatigue, shortness of breath, dizziness. B.P.: 86/66 (Indirect)	Thrill at aortic base with poststenotic dilatation. Valvular obstruction.	Symptoms have diminished. Thrill and systolic murmur diminished. Diastolic murmur present over pulmonic area.	

as harsh or rough in 97, as blowing in 3. In the patients with complicated lesions, there was usually a second systolic murmur, the location varying with the defect.

Diastolic Murmur. A blowing diastolic murmur was audible in 11 patients with pure stenosis. In one, it was located at the apex; in 3, in the aortic area; and in the rest along the left sternal border.

Peripheral Pulses. In 5 patients, all with coarctation, femoral pulsations were absent or weak. In 6 individuals, radial and femoral pulsations were weak.

Blood Pressure. Both the direct and the indirect methods were applied in obtaining blood pressures. The direct method tended to be 5 to 10 mm.Hg higher than the indirect. The highest, lowest and average systolic blood pressures were 175, 72 and 100 mm.Hg. The diastolic pressure ranged between 100 and 40 mm., the average being 60 mm. The extremes of pulse pressure were 90 and 8 mm.; the average 40 mm. Seven individuals, all with severe stenosis, had pulse pressures below 20 mm.

TABLE III—Part 2

Patient, Age, No.	Clinical Features	Findings	Clinical Features	Follow-Up
R. W. 5:11 #88	Fatigue. B.P.: 100/80 (Direct) Systolic Gradient: 60 mm.Hg.	Thrill over aorta. Valvular obstruction.	Active without fatigue. More alert. B.P.: 100/80 (Direct) Thrill absent, systolic murmur decreased, diastolic murmur present. Systolic Gradient: 16 mm.Hg.	4 years, 2 months— Active and asymptomatic. Thrill absent and systolic murmur still diminished.
G. V. 14:4 #89	Fatigue, shortness of breath, profuse perspiration, paresthesias. Diastolic and systolic murmur over aortic area. B.P.: 80/68 (Direct)	Strong systolic thrill over aorta. Valvular obstruction.	Systolic thrill diminished.	6 months—Diastolic murmur disappeared. Systolic murmur and thrill diminished. Exercise tolerance increased. Symptoms decreased.
T. A. 6:0 #90	Fatigue on exertion, profuse perspiration. Cardiac failure. B.P.: 90/50 (Direct) Early diastolic blow at the apex.	Systolic thrill and jet impulse in ascending aorta. Diastolic thrill over left ventricle. After procedure, systolic thrill decreased. Valvular obstruction.	Symptoms diminished. Thrill and systolic murmur diminished. Diastolic murmur remained the same.	7 months—Lobar pneumonia. 1 year. 6 months— Asymptomatic. Systolic murmur and thrill diminished.
S. S. 15:11 #99	Fatigue, shortness of breath, headache, epistaxis. B.P.: 100/65 (Direct) Early diastolic murmur in aortic area.	Ventricular fibrillation occurred before and after relief of obstruction. Normal rhythm resumed by stimulation. Valvular obstruction.	Systolic murmur and thrill were diminished.	
C. P. 12:0 #101	Shortness of breath, profuse perspiration, cough after exertion. B.P.: 106/90 (Indirect)	After dilatation, thrill over ascending aorta became coarser and more diffuse. Valvular obstruction.	Asymptomatic. Systolic murmur and thrill were diminished.	3 years, 7 months— Dizziness, chest discomfort on exertion. Thrill absent. Reduction in intensity of murmur.
D. B. 3:0 #106	Fatigue, shortness of breath, profuse perspiration. Diastolic thrill and early diastolic murmur present.	Dilated ascending aorta, systolic thrill over ascending aorta and diastolic thrill over left ventricle. After procedure, systolic thrill diminished. Valvular obstruction.	Exercise tolerance improved. No shortness of breath. Early to mid-diastolic murmur. Thrill and systolic murmur diminished.	3 years, 1 month— Shortness of breath on moderate exertion, profuse perspiration. Systolic and diastolic murmurs and thrill are present. B.P.: 104/0 (Indirect)
E. M. 3:0 #107	Fatigue, shortness of breath, cyanosis, headache, epistaxis. B.P : 90/60 (Direct). Systolic murmur and thrill over aortic area.	Thrill over aorta. Patent ductus transected. Coarcted aorta (post-ductal) excised. Valvular obstruction.	Systolic murmur and thrill decreased. Faint diastolic murmur in aortic area. Brachial artery tracing now normal. B.P. 120/70 (Direct)	
M. O. 3:0 #108	Fatigue, shortness of breath, profuse perspiration, syncope. Congestive heart failure. B.P.: 80/60 (Direct) Early diastolic murmur.	Ascending aorta dilated. Area suggesting coarctation noted. Valvular obstruction.	Thrill decreased. Murmur diminished. Diastolic murmur absent.	3 months—Asymptomatic. 4 years, 4 months—Slight fatigue on exertion. No thrill.

X-Ray

In the anterior-posterior projection the pulmonary vascular markings were increased in 13, decreased in 2, and normal in 85. The main pulmonary artery was dilated or displaced in 22; of these, 15 had pure aortic stenosis. The heart was enlarged in 41 patients and of normal size in 59. The supracardiac shadow was usually normal, but in 6 it was widened. The contour of the left cardiac border varied, being normal in 35, abnormally rounded in 35, lengthened in 16, straight in 7, and shelved in 7. The ascending aorta was dilated in 50% of the patients. The thoracic spine was straight in each case. One patient with coarctation demonstrated notching of the inferior border of several ribs. Calcification of the aortic valve was visible in 2 patients.

In the right anterior oblique projection, the heart was prominent anteriorly in 19, the level of encroachment of the anterior shadow on the retrosternal space being used as a criterion. The left atrium was dilated in 4. Prominence of the main pulmonary artery in 12 and of the ascending aorta in 2 was observed.

The left anterior oblique view revealed prominence of the ascending aorta in 49 cases. The heart was prominent posteriorly in 19, anteriorly in 5, and left atrial enlargement was seen in 3.

Electrocardiogram

Thirty-two patients had left ventricular hypertrophy, with ST segment and T-wave changes. In a larger number, the amplitude of

TABLE III—Part 3

Patient, Age, No.	Clinical Features	Findings	Clinical Features	Follow-Up
B. A. 18:0 #110	Fatigue, shortness of breath, chest pain. B.P.: 136/80 (Direct)	Transaortic dilatation attempted first. After transventricular dilatation, thrill decreased and a diastolic thrill was felt over left ventricle. Valvular obstruction.	Murmur and thrill diminished. Early diastolic murmur present. B.P.: 136/60 (Direct)	10 months— Early diastolic murmur. B.P.: 140/40 (Indirect) Patient expired suddenly and autopsy revealed cerebral abcess.
W. E. 16:0 #113	Syncope, shortness of breath, fatigue. B.P.: 80/60 (Direct)	Systolic thrill diminished. After procedure, diastolic thrill over aorta was present. Valvular and Subvalvular obstructions.	Diastolic murmur in aortic area. Brachial artery tracing now normal. B.P.: 118/64 (Direct)	
R. M. 28:0 #114	Dizziness, headache, chest pain, abdominal pain, dyspnea. B.P.: 112/94 (Indirect) Early diastolic murmur.	Aorta dilated. Systolic thrill present. Aortic valve 1.9 cm. in diameter. After procedure, thrill was stronger. Valvular obstruction.		2 years, 9 months— Dyspnea only on exertion. Early diastolic murmur in aortic area. B.P.: 116/78 (Indirect)
P. P. 14:0 #115	Shortness of breath after exertion. B.P.: 90/60 (Indirect)	Thrill palpatated over aorta and transmitted to pulmonary artery. Valvular obstruction.	Systolic murmur and thrill diminished. Early diastolic murmur present. B.P.: 110-64 (Indirect)	
S. T. 39:0 #117	Fatigue on exertion, shortness of breath, dizziness. B.P.: 88/52 (Direct)	Thrill over the root of aorta. Calcification of valve noted.	B.P.:100/69 (Direct)	2 years, 9 months—Diastolic murmur present. Congestive heart failure.
R. S. 7:10 #118	Profuse perspiration, fatigue, congestive heart failure. B.P.: 120/70 (Direct)	Dilated ascending aorta with thrill. After procedure, thrill diminished. Valvular obstruction.	Systolic thrill and murmur diminished.	2 years, 8 months—Active and asymptomatic. Systolic thrill absent. Systolic murmur diminished.
R. H. 8:11 #125	Fatigue, shortness of breath, angina, profuse perspiration, epistaxis, headache, syncope, cough, parasthesias of lower extremities, irritability. B.P.: 80/60 (Indirect)	Ascending aorta was dilated with a palpable thrill. After procedure, thrill was diminished and diffuse. Valvular obstruction.	Slight fatigue noted, but exercise tolerance has increased. Otherwise asymptomatic. B.P.: 98/76 (Indirect) Systolic murmur and thrill diminished.	4 months—Exercise tolerance increased. Thrill and systolic murmur still diminished. B.P.: 98/76 (Indirect)

S in V1 and of R in V6 suggested the possibility of left ventricular hypertrophy. One patient had Wolff-Parkinson-White syndrome without heart enlargement. Another patient exhibited the Wolff-Parkinson-White syndrome and evidence of a septal infarct. This was demonstrated at autopsy. The remaining 67 patients had normal tracings.

Cardiac Catheterization

This procedure was performed on all but 19 patients. Four were subjected to right and left heart catheterization. The gradients across the aortic valve obtained in the 4 left heart catheterization procedures were 40, 55, 110 and 140 mm.Hg. Cardiac output was within normal limits in all patients in whom oxygen consumption could be obtained. Left to right shunts were noted in 1 at the atrial level, 3 at the ventricular level and 3 at the pulmonary level. In 11 patients, there was a systolic pressure gradient across the pulmonary valve (10, 10, 10, 15, 20, 20, 28, 30, 40, 90, and 108 mm.Hg.). Pulmonary hypertension was present in nine, the pressures being 30/5, 30/10, 30/20, 40/15, 42/25, 46/20, 70/55, 80/60, and 110/60 mm.Hg. The mean pulmonary capillary pressure was obtained in 7 of the patients with pulmonary hypertension. It ranged from 9 to 28 and averaged 16 mm.Hg.

Brachial Artery Tracings

Tracings were obtained in 64 cases, of which 8 were considered normal. A slow rise to systolic peak was the most common finding in the abnormal tracings. Five patterns of curve were seen: (1) a slow rise to peak in 10 cases, (2) a dicrotic notch in 21, (3) a double systolic peak in 14, (4) an anacrotic notch in 7 and multiple peaks in 1, and (5) a slow rise to a plateau in 3.

Thoracic Aortography

The procedure allowed complete visualization of the thoracic aorta in 8 patients in whom this study was done. The presence of a patent ductus arteriosus with coarctation of the aorta was confirmed in 2. In 4 other patients, two had coarctation of the aorta, one had a double area of coarctation, and the fourth had post-

TABLE III—Part 4

TRANSAOTRIC COMMISSUROTOMY

Patient, Age, No.	Clinical Features	Findings	Clinical Features	Follow-Up
B. O. 34:0 #80	Fatigue, headache, dizziness, lightheadedness. B.P.: 92/64 (Indirect) Systolic Gradient: 29.4 mm.Hg.	Ascending aorta dilated. Thrill was present. Valvular obstruction.	B.P.: 80/40 (Direct) Systolic murmur and thrill decreased. Diastolic murmur present.	
M. Z. 19:0 #81	Easy fatigue, shortness of breath, orthopnea, angina, palpitation, headaches, cough. B.P.: 104/62 (Direct) Early diastolic murmur present.	Orifice measured .5 cm. After procedure, 2.2 cm. Subvalvular obstruction. Systolic Gradient: 140 mm.Hg.	Definite improvement in symptoms. B.P : 120/80 Thrill and systolic murmur diminished.	6 days—Thrill and systolic murmur diminished. Early diastolic murmur present. Systolic Gradient: 80 mm Hg.
F. W. 31:0 #87	Fatigue, syncope, exertional dyspnea, angina. B.P.: 106/72 (Indirect) Diastolic murmur present	Ascending aorta dilated. Thrill present. Calcification of leaflet. After procedure, thrill diminished. Valvular obstruction.	B.P.: 124/86 Systolic thrill and murmur diminished. Diastolic murmur present.	12 days—B.P.: 124/86. Systolic murmur and thrill diminished. Diastolic murmur present.
		COMMISSUROTOMY UNDER DIRECT VISION		
R. K. 28:0 #34	Cough, fatigue, dyspnea, dizziness. B.P.: 83/45 (Direct) Proto-diastolic murmur. Systolic Gradient: 104 mm.Hg.	Hypothermia, 88°F. Systolic and diastolic thrill over aorta. Systolic thrill over pulmonary artery. Aneurysm of sinus valsalva. Subvalvular aortic and infundibular pulmonic obstruction.		Patient expired within 24 hours.
J. G. 11:1 #49	Fatigue, chest pain, epistaxis. B.P.: 105/80 (Indirect)	Hypothermia, 85°F. Aneurysm of sinus of valsalva. Valve orifice was 5 to 6 mm. After resection, was 2.2 cm.	Asypmtomatic. Thrill and systolic murmur decreased. Diastolic murmur present.	4 months—Asymptomatic. Systolic thrill and murmur decreased. Diastolic murmur present.
B. G. 15:0 #70	Shortness of breath, syncope, fatigue. B.P.: 106/63 (Direct) Systolic Gradient: 92 mm.Hg.	Pump oxygenator with coronary sinus perfusion. Valvular and Subvalvular obstruction.	Systolic thrill and murmur decreased. Early diastolic murmur present. B.P.: 107/60 (Direct) Systolic Gradient: 21 mm.Hg.	
B. H. 13:6 #82	Severe fatigue and shortness of breath, paresthesia of lower extremities, profuse perspiration, angina, headache. B.P.: 99/64 (Indirect)	Hypothermia, 86°F. Ascending aorta was dilated. Thrill was present.	Symptoms have diminished considerably. No angina. B.P.: 130/42-0 (Indirect) Thrill and systolic murmur diminished. Diastolic murmur present.	4 months—Activity increased. 1 year—Climbs 3 flights of stairs without tiring. Diastolic murmur present. B.P.: 120/0 (Indirect)
M. F. 12:4 #93	Headaches, chest pain. BPL 109/85 (Direct) Systolic Gradient: 56 mm.Hg.	Pump oxygenator was used. Post stenotic dilatation. Valvular orifice .5 cm.^{2}. After procedure, thrill diminished.	Murmur and thrill decreased.	
M. W. 11:0	Profuse perspiration, convulsions, abdominal pain, headaches, abnormal EEG, fatigue, chest pain, epistaxis, personality changes. B.P.: 100/90 (Indirect)	Pump oxygenator, direct vision. Valvular obstruction.	Diminished murmur and thrill.	3 months—Active with marked decrease in symptoms. Seizures absent. Improvement in personality noted.
L. P.	Readmitted for second valvulotomy because of reoccurrence of symptoms, which increased in severity. B.P.: 72/40 (Direct) Systolic Gradient: 40 mm.Hg.	Hypothermia, 86°F. Three fused commissures. No evidence of subvalvular stenosis.	Systolic Gradient: 20 mm.Hg.	Uneventful.

ductal hypoplasia of the aorta. The study revealed fusion of the aortic cusps in 1 and in another, significant aortic regurgitation.

Surgery

Thirty-four of the 36 patients subjected to surgery are demonstrated in Table III. The 2 patients omitted did not have an aortic commissurotomy performed.

Twenty-five patients were subjected to transventricular aortic commissurotomy. At the time of surgery, 3 patients also had other cardiac lesions corrected: patent ductus transected in 1 patient (#29), and patent ductus transected and excision of coarcted aorta in 2 (#64, #107). One patient (#84) had a coarcted aorta surgically corrected 2 years prior to the time of commissurotomy. The valvular type of stenosis was found in each of the 25 patients. Systolic gradients, recorded preoperatively in 5 patients, were 140, 120, 90, 60 and 20 mm.Hg. Immediately postoperatively, 21 showed definite clinical improvement, and in 4, no data were recorded. The systolic gradients recorded in 4 were noted to have decreased to 44, 40, 40 and 15 mm.Hg.

The postoperative period was complicated

TABLE II
DEATHS IN THIS SERIES

Case No.	Age at Time of Death (Years)	Race/Sex	Symptoms	EGG	Mode of Death	Diagnosis
31	20	W/M	Fatigue SOB Epistaxis Hemoptysis	LVH RVH 1° Heart block	Cardiac failure 6th day post-op.	Surgical Dx.— AS (Valvular) AI PS
34	28	W/F	Fatigue SOB Epistaxis Cough Dizziness Hemoptysis	LVH	Cardiac arrest immed. post-op.	Surgical Dx.— AS (Subvalv.) PS LSVC Calcification of valves
73	11 5/12	W/F	Fatigue Profuse perspir. SOB Syncope Chest pain Cough	Normal WPW	Sudden death. Cardiac failure 15 hr. post rt. heart card. cath., while in hosp. awaiting surg.	Autopsy Dx.— AS (Subvalv.) Absent Rt. Cor. LSVC
84	8 10/12	W/M	Fatigue Cyanosis Epistaxis Paresthesia	LVS	Sudden death while playing in shallow water, 10 mo. after diagnosed	No autopsy obtained. Clinical Dx., pure AS
110	18 10/12	W/M	Fatigue SOB Headache Epistaxis Cough Paresthesia Convulsions	LVH	While dancing, collapsed & died of CVA 10 mo. post-op.	Surigcal Dx.— pure AS
116	9	W/M	Fatigue SOB	LVH LAD	SBE 2 years after dx.	Autopsy Dx.— AS (Subvalv.)
119	11 4/12	W/M	Fatigue SOB Cyanosis Syncope Chest pain Dizziness TIC	LVH	CVA following bowel resection for necrotizing arteritis and gangrene 1 mo. post resection of coarcted aorta	Surgical Dx.— AS (Valvular) Coarctation

W — White
M — Male
F — Female
SOB — Shortness of breath
LVH — Left ventricular hypertrophy
WPW — Wolff-Parkinson-White syndrome
RVH — Right ventricular typertrophy
SBE — Subacute bacterial endocarditis
LSVC — Left superior vena cava
LAD — Left axis deviation
CVA — Cardiovascular accident
Dx — Diagnosis
AS — Aortic Stenosis
AI — Aortic Insufficiency
PS — Pulmonary Stenosis

in 8: Congestive failure in 2, congestive failure and mediastinitis in 2, retained secretions requiring bronchoscopy in 3, and septicemia in 1. Two other patients developed significant aortic insufficiency (#105, #110). Another 6 patients demonstrated a postoperative diastolic murmur which was without demonstrable significance. One patient died 6 days after surgery (#31, Tables II and III). Follow-up studies of 15 patients over a period ranging from 4 months to 4 years revealed gratifying results in 11, fair in 1, and poor in 2. In 1 in whom the results were poor (#78), reoperation was necessary. The fifteenth patient expired 10 months postoperatively (#110, Tables II and III). This procedure had a mortality rate of 4%, a morbidity rate (2 patients with aortic insufficiency) of 8%; there was symptom relief in 60%.

Three patients were submitted to surgical correction of their lesions via the transaortic route. Definite improvement was noted in all 3, although 1 patient developed a diastolic murmur and a 24 mm.Hg. drop in diastolic pressure (#80). This procedure had a mortality rate of 0%, a morbidity rate of 33%; there was symptom relief in all.

Commissurotomy under direct vision was performed in 7 patients. There was 1 death (#34, Tables II and II) and definite improvement in 6. Postoperatively, aortic insufficiency was noted in 1 patient (#82) and a wound abscess controlled by antibiotics in another (#88). The mortality rate in this procedure was 14%, the morbidity rate, 14%, and symptom relief was 86%.

Discussion

Definition. Anatomically, congenital aortic stenosis is an obstruction to the left ventricular outflow tract, either at the valvular or subvalvular site. Since it is a developmental defect which occurs around the seventh week of gestation, it must certainly be present at birth. The valvular type consists of distorted, thickened, or fused cusps,(14) which form a dome-shaped diaphragm with a central opening,(3) while the subvalvular stenosis consists of a persistent fibrous band,(9) or an annular thickening of endocardium, situated approximately 5 mm. below the aortic ring.(3) Physiologically, congenital aortic stenosis requires the presence of a gradient between the left ventricle and aorta.

Incidence. Congenital aortic stenosis ranks fifth among the developmental cardiac defects studied at this institution. The disease has a 1.6:1 predelection for males. Two investigators (3,5) have reported a ratio of males to females as 4:1 in 37 patients and 5:1 in 67. In reviewing our series, it was noted in the first 80 cases that the sex incidence was equal. Incidence based on any small series must be considered of only relative significance. One would expect figures based on a series of 100 patients to be somewhat reliable.

Patho-Physiology. An increased resistance is offered to the systemic outflow, which must be overcome by the left myocardium. As the severity of the obstruction increases, incomplete emptying of the left ventricle occurs with a subsequent rise in the diastolic volume and intraventricular pressure, thus a gradient between the left ventricle and the aorta is established, the magnitude of the gradient being directly proportional to the severity of the stenosis. Early in the disease, the left ventricle will compensate for the increased diastolic volume and the intraventricular pressure in several ways. This is accomplished by increasing its systolic contraction according to Starling's law of the heart and by lengthening the period of ventricular contraction and systolic ejection phase, resulting in an increase in the total systolic interval.

As the child grows, there is an increase in the blood volume, which must be forced through a stenotic orifice that has remained relatively constant. The left heart, in order to overcome this obstruction, must generate a pressure proportionate to the increased volume. Dilatation and hypertrophy may occur to meet this increased pressure load. The hypertrophied heart may satisfy the needs of the body at its own expense. The coronary flow normally is greatest during diastole. Now, coronary flow is decreased by virtue of a shortened diastolic phase, an elevated intraventricular pressure encroaching upon the intracoronary pressure, and an increased systolic contraction having a squeezing effect on the coronary lumina. Thus, the greater nutritional requirements of an over-worked, hypertrophied myocardium may not be satisfied, and myocardial ischemia, chest pain, arrhythmias and sudden death may follow. The myocardium may not be insulted as just described and, yet, its compensatory mechanism to maintain cardiac output may become exhausted when exposed to stress and strain resulting in an inadequate output. This may be manifested by fatigue and shortness of breath because of failure to satisfy the increased needs of the skeletal musculature on exertion; or dizziness, syncope, and convulsions because of a transient cerebral ischemia.

Natural History. The pathophysiology implies that early in the disease the severity of the obstruction is usually minimal. This is borne out by the following: The lesion is present at birth, yet, in only 21 was a murmur detected during the neonatal period and in less than half was a murmur discovered by the first year. Murmurs were noted in 75 by the fourth year, yet in only 10 of these patients was a diagnosis established. The murmur, when first detected, may be a soft, systolic one, heard best along the left sternal border and classified as "functional." Initially, the patient may be completely asymptomatic, and roentgenographic and electrocardiographic studies may reveal nothing abnormal. Later, the murmur is found to shift from the site of a "functional" murmur to the midsternum and then to the aortic area (Figure 4). The electrocardiogram, if taken serially, will reveal significant changes from the initially normal tracing to a pattern of left ventricular hypertrophy (Figure 6). The roentgenographic contour of the heart will also be noted to have changed to one of an S (Figure 5). Symptoms may or may not appear. If they do, the patient will most like-

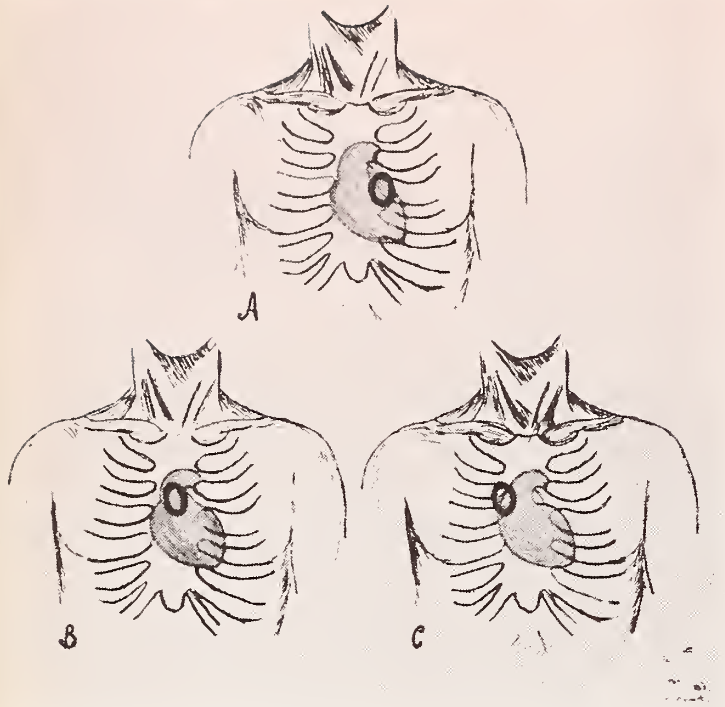


Fig. 4: The murmur shifts from the left sternal border to the aortic area.

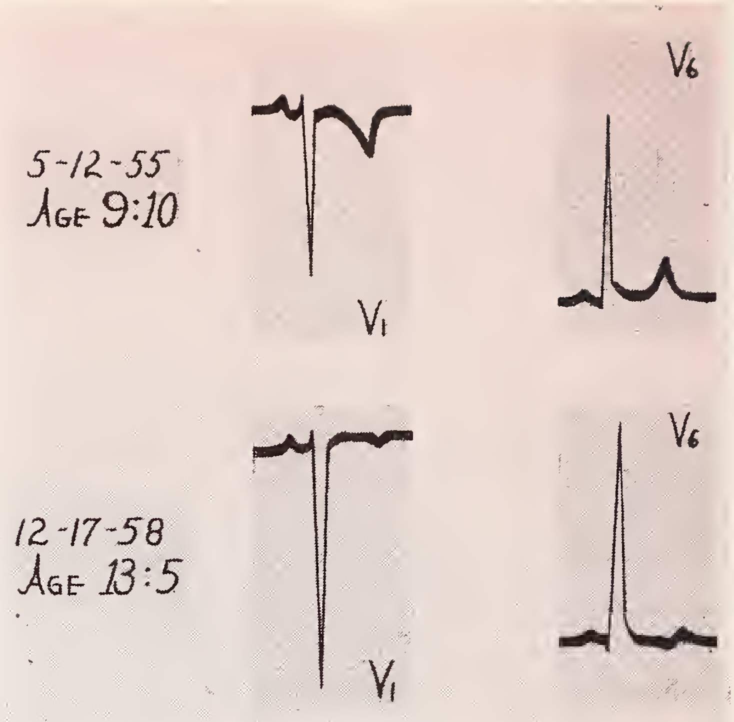


Fig. 6: Electrocardiographic changes with increasing severity of the disease. Deepened S in V_1, heightened R in V_6, ST segment and T-wave changes.

ly complain of fatigue, and if the lesion has become acutely severe, there may be episodes of syncope or convulsions. The individual with electrocardiographic evidence of left ventricular hypertrophy, with or without symptoms or with syncope, has a poor prognosis. This patient, if not surgically treated, may develop any one or a combination of the following: Aortic insufficiency, myocardial infarcts, or subacute bacterial endocarditis. Providing none of the aforementioned are responsible for the patient's demise, he may very well be the victim of sudden death.

Some concept of time in relation to the course of the condition may be appreciated by studying Table I. We can assume, because of the insidious, subtle nature of congenital aortic stenosis, that, in most cases, the diagnosis was established at a time when symptoms first appeared, increased in severity, or when the murmur and thrill shifted to the aortic area. The period between 4 and 12 years seemed to be critical. During this period, the majority of diagnoses were established; 14 out of 36 patients who required surgery were operated and 4 patients out of 7 who died in our series were also in this critical age group. The 4 who died are presented in Table II. Three of the 4 died without the benefit of surgery. Two of these 3 died suddenly.

Note that prior to 4 years, only 10 diagnoses were established; 3 required surgery and there were no deaths. Beyond 12 years, 17 out of 21 patients who were diagnosed had severe aortic stenosis. Severity was based on electrocardiographic evidence of left ventricular hypertrophy with or without symptoms. These 17 patients were treated surgically and 3 died.

Since the disease may be progressive, it is not surprising that in 22 patients the symptoms were noted to increase in severity over a period ranging from 1 to 13 years. Seven patients were asymptomatic at their initial visit. Three of these remained asymptomatic after 2 to 4 years, while the remaining 4 developed symptoms after 1, 3, 8 and 9 years.

A sudden appearance of additional and increasing severity of symptoms was noted in 11 patients between the ages of 9 and 14 years.

Diagnosis

The presence of a harsh, systolic murmur best heard over the aortic area is almost pathognomonic. This is usually accompanied by a systolic thrill. The thrill and murmur may be transmitted to the neck.

Presence of brown nevi (Figure 3) on the chest and abdomen in addition to a murmur should make one suspect an aortic lesion.

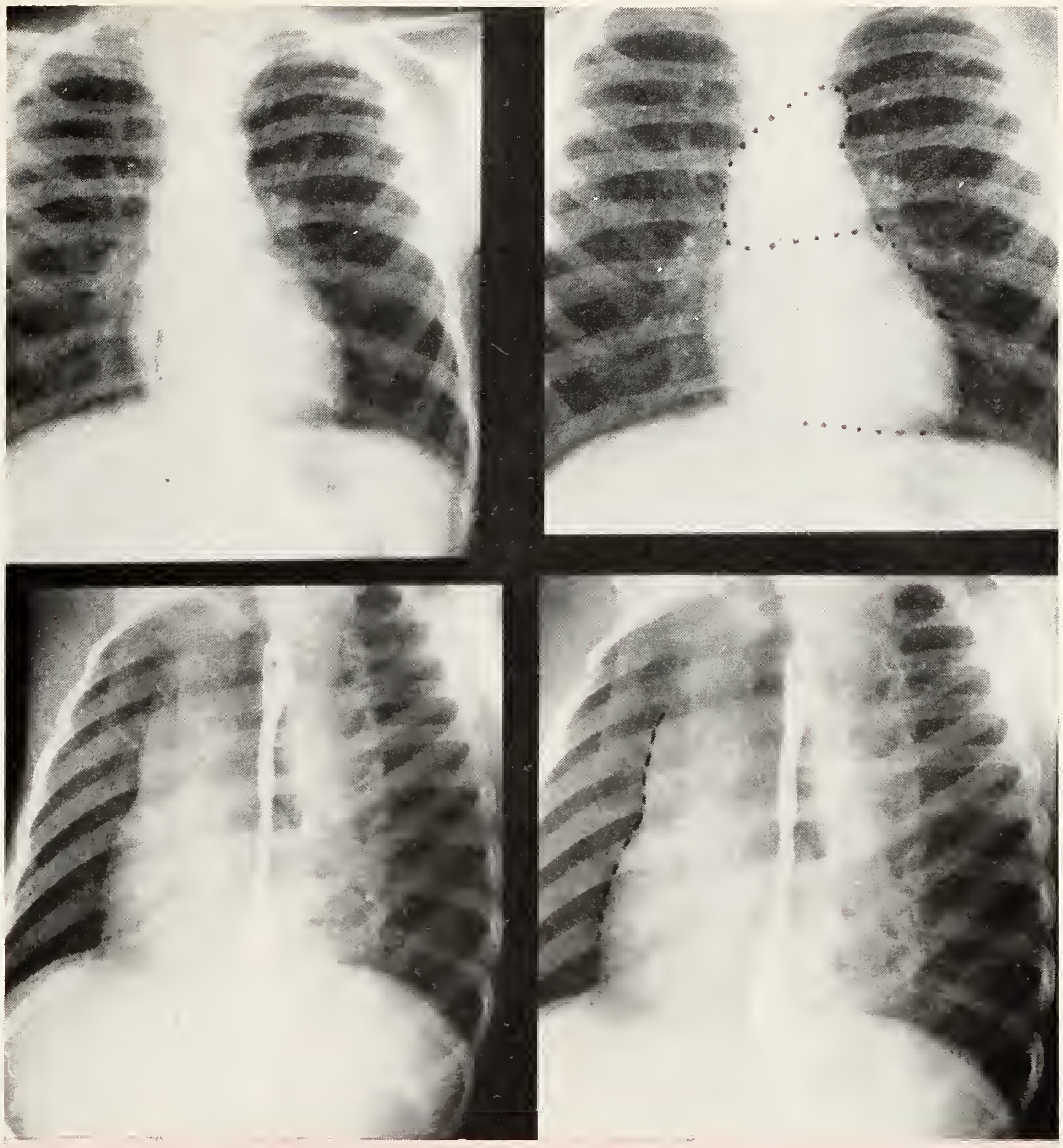


Fig. 5: Roentgenographic diagnosis. Upper left: Anterior posterior view, note prominent aortic knob, dilated ascending aorta, lengthened left border. Upper right: S-shaped configuration outlined. Lower left: Left anterior oblique view, dilated ascending aorta noted. Lower right: Dilated ascending aorta outlined.

Chest films, anterior-posterior and left anterior oblique views, suggested the proper diagnosis in half of the cases. Figure 5 demonstrates the pertinent findings. A prominent main pulmonary artery is frequently present in pure aortic stenosis. Actually, it is pushed laterally and anteriorly by the dilated ascending aorta and is, itself, not dilated.

The electrocardiogram has proved to be a better prognostic than a diagnostic tool. Sixty-eight percent of our patients had normal electrocardiograms and, therefore, it did not aid in the diagnosis in the majority of cases. As a prognostic guide, it was excellent. ST segment and T-wave changes were found to be the most reliable criteria for indicating the severity of the lesion. The two patients in this series who died suddenly had ST segment and T-wave changes. In a recent paper,(2) 17 out of 19 who died suddenly had left ventricular hypertrophy.

Right heart catheterization determined the presence or absence of associated lesions. The right heart catheter recorded pressures in the pulmonary circuit and an elevated pulmonary pressure was found in severe cases of aortic stenosis. A slow rise to systolic peak on the brachial artery tracing suggests aortic stenosis. On 2 occasions, the catheter passed in the left side of the heart via a patent foramen ovale in 1 and interatrial septal defect in the other. In both cases, the gradients across the aortic valve were measured. Any gradient over 40 mm. Hg. is severe. Left heart catheterization is less innocuous than right heart catheterization and, even though it is presently the best method of obtaining the pressure gradient, it cannot be recommended routinely.

The most significant complaints relate to the central nervous system. We have found that the presence of syncope or convulsions indicates severe aortic stenosis, as have others.(13)

In Reynolds' report,(2) 5 patients who died suddenly had had syncope.

Associated cardiac anomalies should not confuse the diagnosis, since the site at which the murmur of aortic stenosis is heard best is not occupied by the murmur of any other congenital cardiac defect. Eleven of our patients had diastolic murmurs which could not be explained by the presence of any associated lesion. Two possible explanations are, dilatation of the aortic ring secondary to chamber dilatation, or incomplete closing of rigid, distorted cusps, both of which lead to aortic insufficiency. Other cardiac defects are not uncommonly associated with aortic stenosis.(8,11) Twenty four percent of our patients had an associated lesion. The most frequent was pulmonic stenosis (11 cases) and next, coarctation of the aorta (7 cases).

At the present moment we have no method of differentiating subvalvular from valvular stenosis. Wood(8) and Taussig(9) believed the subvalvular type to be more common. However, others(4,7,8) have found a higher incidence of the valvular type. According to Abbott,(15), subaortic occurs more commonly in males than females. In our series, there were 38 patients in whom a diagnosis of valvular or subvalvular aortic stenosis was definitely established by operation or autopsy. Only 4 of these had subvalvular and 1 had combined. Three were female and 2 were male. Three of these patients died (Table II, #34, #73, #116). The differentiation is an important one; the prognosis of subvalvular seems to be poorer; and there is no adequate surgical procedure for its correction.

Treatment

Two surgical procedures are currently available for the correction of this lesion. The first procedure employs the use of a dilator by the transaortic or transventricular route. In the second procedure, direct visualization of the obstruction is made possible by the utilization of hypothermia or a pump oxygenator. The results have been gratifying in both procedures. Although the latter procedure is the one of choice, over-eagerness on the part of the surgeon to correct the obstruction may result in the production of some degree of aortic regurgitation.

It is now well documentated that congenital aortic stenosis is not benign and may terminate in sudden death. A diagnosis can be established early and patients followed for indications of increasing severity of their obstruction. At such a time they may be benefited by a corrective operative procedure of low mortality.

We propose the following clinical, therapeutic classification which divides the patients into three groups — severe, moderate, and mild.

CLINICAL	THERAPEUTIC
A) Severe. Any patient with aortic stenosis manifesting one or more of the following: 1) ST segment and T-wave changes on the electrocardiogram with or without the presence of symptoms 2) Syncope or convulsions with or without the electrocardiographic criteria. 3) Systolic gradient across the aortic valve of 40 mm. Hg or more	Corrective surgery is indicated.
B) Moderate. Any patient with the following: 1) Symptoms other than syncope or convulsions 2) No electrocardiographic evidence of ST segment and T-wave changes. 3) Systolic gradient across aortic valve of less than 40 mm. Hg	1) Annual physical examination and electrocardiogram 2) No competitive sports or other strenuous exertion 3) Any patient with increase in symptoms or electrocardiographic changes suggestive of left ventricular hypertrophy should be considered for left heart catheterization.

C) Mild. Any patient with the following: 1) No symptoms 2) Normal electrocardiogram 3) Systolic gradient across aortic valve of less than 40 mm. Hg	1) Annual physical examination and electrocardiogram 2) No limitations 3) Any patient with increase in symptoms or electrocardiographic changes suggestive of left ventricular hypertrophy should be considered for left heart catheterization if not already performed.

It should be noted that prior to choosing surgery for therapy in this institution, there had been 4 sudden deaths among the first 13 patients. Since that time, in the next 141 patients, this catastrophe has not occurred.

Summary

1. One hundred patients with congenital aortic stenosis have been studied.

2. In the majority of patients, the diagnosis may be made on the basis of murmur alone.

3. In some individuals, the murmur is not in the typical location initially, but gradually shifts.

4. Unlike other common congenital cardiac anomalies, congenital aortic stenosis is marked by the possibilty of sudden death.

5. Surgical therapy at the present time is relatively satisfactory, and is indicated in certain carefully chosen patients.

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OUTPATIENT SERVICE FOR THE CARDIAC PROGRAM

The Crippled Children's Service Section will pay for out-patient service at the University of Minnesota Hospitals for children accepted in the program for cardiac conditions amenable to surgery.

Anal Surgery in Infants and Children

More children under 14 years of age are afflicted with proctologic problems than we realize. Fortunately they respond to conservative treatment in a high percentage and surgical correction is uniformly successful in the few more difficult cases.

LOREN E. NELSON, M.D.
St. Paul, Minnesota

A SURPRISINGLY large number of infants and children are seen in a proctologic practice. It is interesting to study this group of patients to determine the incidence of various abnormalties of the anus, rectum and colon. A group of 373 cases from a private proctologic practice were reviewed. These children were 14 years of age and under. The conditions found in these children are found in Table I. It is apparent that children may have a large variety of proctologic problems, and each is deserving of careful evaluation and proper treatment.

It is the purpose of this paper not to discuss in detail the lengthy list of proctologic problems of children, but to limit the discussion to anal conditions that may require surgery. Fortunately, despite the large number of children seen with this trouble, only a few require surgery. Of a group of 373 children presenting with proctologic problems, only 32 required anal surgery. The conditions that sometimes required surgical treatment were as follows: anal fissure, perirectal abscess and fistula, rectal prolapse, and congenital anal strictures. These will be discussed separately.

Anal Fissure

Anal fissure is the most common anorectal disease in infancy and childhood. Reports from the literature mention an incidence of 25-40% of pediatric proctologic disorders (1, 2). The incidence in this series was 23.6%. 88 children were seen with anal fissure. The cases were quite evenly divided between the sexes — 47 male and 41 female. The children ranged in age from three months to fourteen years. The distribution of cases for the various ages was as follows:

Under 1 year	20
1-5 years	41
5-10 years	22
10-14 years	5

The most common symptoms were bleeding and anal pain. The complaints of the children in this series were:

Bleeding and pain	31
Bleeding alone	19
Pain alone	12
Constipation, pain and bleeding	6
Constipation and bleeding	2
Constipation and pain	2
Constipation alone	1
Diarrhea and bleeding	1
Not specified	14

The anatomic location of these fissures was:

Anterior	34
Posterior	31
Anterior and posterior	12
Lateral	1
Not specified	10

The majority of anal fissures in children can be treated without surgery. In this group of cases, 76 were successfully managed by conservative treatment. This consists of the local application of medication — usually Sulfathiazole ointment. A lubricant such as Zymenol is given to keep the stools soft. If necessary a tap water enema is given every two days to keep the rectum empty and to avoid the passage of a large, hard stool while the fissure is healing. The child is examined every two weeks, using a small anoscope. When the conservative treatment is successful, the fissure is usually healed within one month.

TABLE I

	No. of Cases	Percent
CONSTIPATION	107	28.7 %
FISSURE	88	23.6
PRURITIS	27	7.2
POLYP	27	7.2
PROLAPSE	22	5.9
FISTULA	21	5.6
ULCERATIVE COLITIS	16	4.3
ABSCESS	9	2.4
ANAL STRICTURE	9	2.4
HEMORRHOIDS	8	2.1
INCONTINENT	5	1.3
COLORECTAL INVAGINATION	4	1.1
IRRITABLE COLON	3	0.8
CRYPTITIS	3	0.8
PINWORMS	3	0.8
PILONIDAL	3	0.8
TRAUMA	2	0.5
SKIN TAGS	2	0.5
IMPERFORATE ANUS	2	0.5
INTUSSUSCEPTION	2	0.5
MUSCLE SPASM	1	0.3
MUCOSAL ULCER	1	0.3
COCCYDINIA	1	0.3
MECKELS DIVERTICULUM	1	0.3
HYDRADENITIS	1	0.3
MEGACOLON	1	0.3
FECAL IMPACTION	1	0.3
FURUNCLE	1	0.3
LYMPHOID HYPERPLASIA	1	0.3
CYST	1	0.3

Conservative treatment failed in 12 patients from this series and surgery was necessary. In a child this operation is not difficult, the fissure is excised and the scarred muscle fibers divided. The wound is left open and followed closely during the several weeks following the operation to insure proper healing. Most children are able to leave the hospital the day after the surgery is performed. The operation was successful in all 12 patients.

Perirectal Abscess

The perirectal abscesses seen in infants and children often seem to represent a subcutaneous abscess that is not connected with the anal canal. Drainage of this type of abscess is often all that is necessary. No fistula results and further surgery is not necessary.

In this series nine children were seen with abscesses of the perianal region. All were boys ranging from the age of four weeks to nine years. Three cases were treated conservatively with hot baths, and the abscesses either subsided or drained spontaneously. Six cases were treated surgically. These abscesses were unroofed. During the time that these children have been followed, none have been found to have an anal fistula.

It is important that a child with a perirectal abscess be given the same consideration as an adult. The abscess should be drained early. It is best to unroof the abscess. A small incision often does not adequately drain the abscess and the inflammation continues. The wound that results from the unroofing of the abscess heals rapidly. It should be followed closely to be sure that solid healing takes place with no "bridging over" of an unhealed pocket.

Anal Fistula

Anal fistulas are found most often in children under one year of age. Almost invariably the patient is a male. The fistula is almost always a simple, direct tract, lateral to the anus. It has been suggested that the lateral crypts of infants are larger and more vulnerable to trauma than those of the anterior and posterior walls of the anal canal.(3,4,5)

Twenty-one patients with anal fistula were seen in this series, 19 were male and 2 were female. Eighteen of the 21 children were under one year of age and 14 were under six months of age. The location of the fistula was recorded in 16 instances, 14 were lateral, one was anterior and one posterior. Surgery was necessary in 12 patients. The youngest child operated upon was ten weeks old. The results were good, and none of the patients had a recurrent fistula.

Children that appear to have an anal fistula should be evaluated carefully before surgery is recommended. A child with a history of a recurrent perianal abscess which has been drained several times, is certainly a candidate for a fistulectomy. If a child is seen soon after the first abscess has been drained he should be followed closely to make certain whether a fistula actually exists or not.

When surgery is done it consists of a fistulectomy. The tract is laid open and granulation tissue curretted away. The posterior wall of the tract is not disturbed. The edges of the wound are trimmed away (no muscle should be removed) and the wound is left open. The wound is followed closely during the healing period to be sure that it heals solidly.

Prolapse

The prolapse seen in infants and children is usually a mucosal prolapse, not a true procidentia. Most cases can be treated conservatively; surgery is rarely necessary. (6)

Twenty-two children were seen in this series with rectal prolapse. The cases were equally divided between the sexes. They ranged in age from two months to 12 years. Nine cases were managed conservatively. An attempt was made to establish regular, soft bowel movements without straining. The mother was instructed to reduce the prolapse promptly when it occurred. The use of a narrow toilet seat was suggested.

Injections were used for 12 patients. One injection was all that was necessary for 8 cases. Two children had good results with two injections and this treatment failed in two cases. One of these was a ten year old girl who subsequently required surgery to correct the prolapse. One patient was treated by linear cauterization of the redundant mucosa.

The results of the injection treatment of prolapsing mucous membrane of children are quite spectacular. This method should certainly be tried before surgery is suggested. The agent most commonly used in this series was five per cent phenol in olive oil. 3-5cc is usually injected posteriorly beneath the bulging mucous membrane.

Anal Stenosis

Eight patients with congenital anal stenosis were seen. The children ranged in age from five weeks to seven months. Regular dilatations resulted in an adequate anal opening in three cases. Anotomy followed by regular dilatations was required for the other five cases.

Hemorrhoids

This subject is included in this paper on anal surgery in children only to point out that surgery for children with hemorrhoids is practically never necessary. Eight children were seen with hemorrhoids in this series; three had small thrombosed external hemorrhoids, three had small internal bleeding hemorrhoids, and two complained of some bleeding and protrusion. All cases were managed conservatively.

Discussion

It can readily be seen that infants and children may suffer from many of the anal disorders that afflict adults. Fortunately, the need for surgery for these conditions is infrequent compared with similar conditions in adults. When surgery is necessary, it is not difficult to perform, and the results from properly executed operations are uniformly excellent.

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THE ANAL SPHINCTER

They say that man has succeeded where the animals fail because of the clever use of his hands, yet when compared to the hands, the sphincter ani is far superior. If you place into your cupped hands a mixture of fluid, solid, and gas and then through an opening at the bottom try to let only the gas escape, you will fail. Yet the sphincter ani can do it! The sphincter apparently can differentiate between solid, fluid, and gas. It apparently can tell whether its owner is alone or with someone; whether standing up or sitting down; whether its owner has his pants off or on. No other muscle in the body is such a protector of the dignity of man, yet so ready to come to his relief. A muscle like this is worth protecting!

Walter Bonemeir, M. D.

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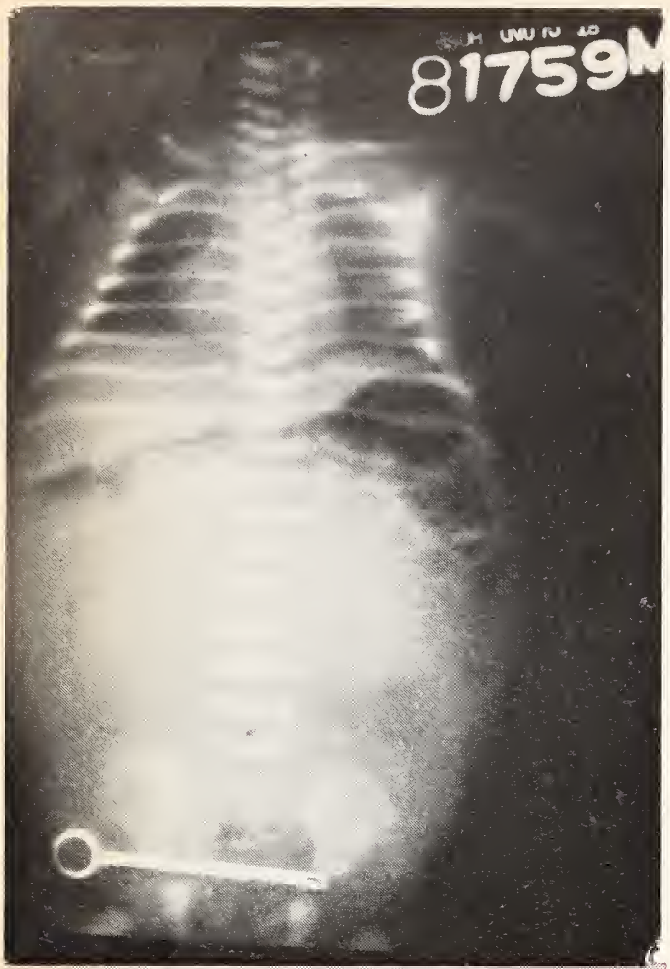

Fig. 1. Flat plate of abdomen taken shortly after delivery.

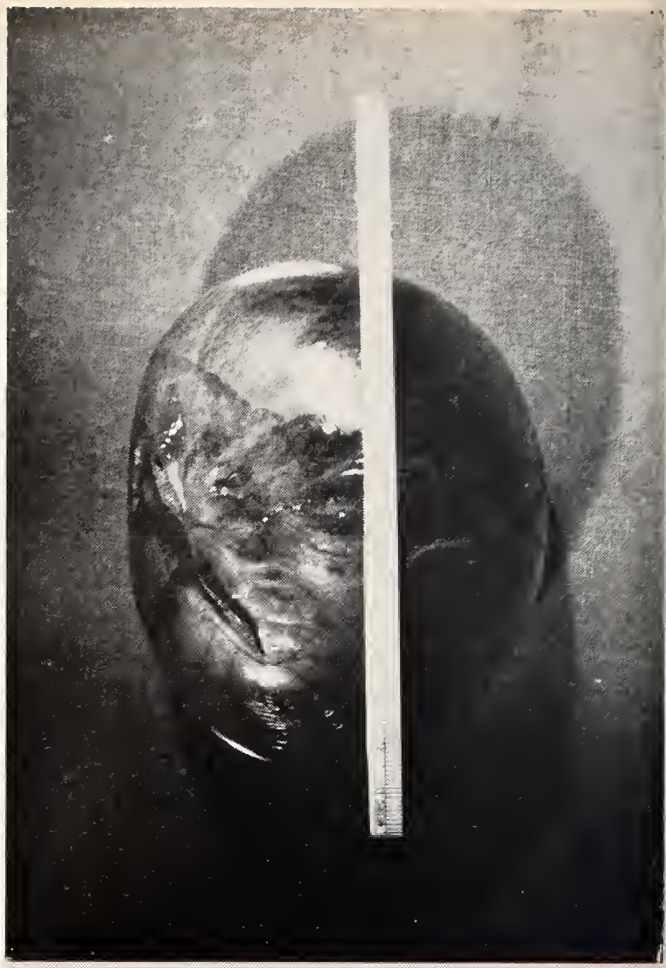

Fig. 2. Ovarian cyst after removal.

Giant Ovarian Cyst

ARTHUR E. DAVIS, JR., M. D.*
St. Cloud, Minnesota

IN THE NEWBORN period approximately 25% of the female infants examined at autopsy will have cystic ovaries[1]. Most of these are relatively small and are asymptomatic. These cystic ovaries are usually lined by granulosa cells and luteinization may occur. Ovarian cysts such as these become a clinical problem only when they become excessively large or when they become pedunculated and undergo tortion of the stalk. There is, however, usually no functional significance, as these most probably represent retention cysts.

Case Report

This full term, newborn, female infant was noted to have a distended abdomen at delivery. The birthweight was 3415 grams (7 pounds-8 5/6 ounces) and the length was 20 inches. The respirations were spontaneous. Physical examination was within normal limits, except for a markedly distended abdomen that was firm to palpation. Rectal examination was not remarkable, and a small amount of meconium was noted on the fingertip. Catheterization revealed 6 cc. of clear urine. The mass within the abdomen was not

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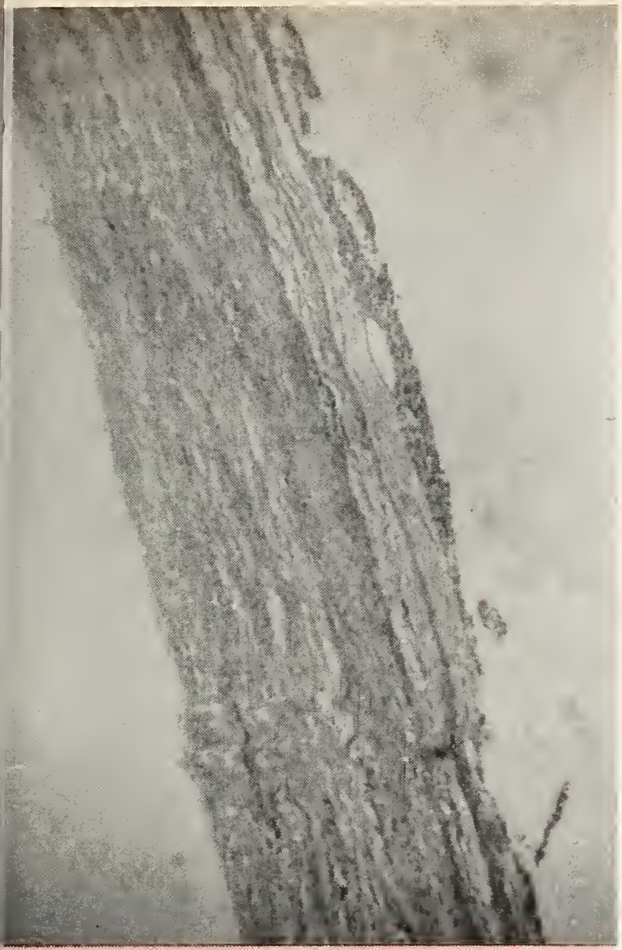

g. 3. Low power photomicrograph of the ovarian cyst. H & E stain (x 120).

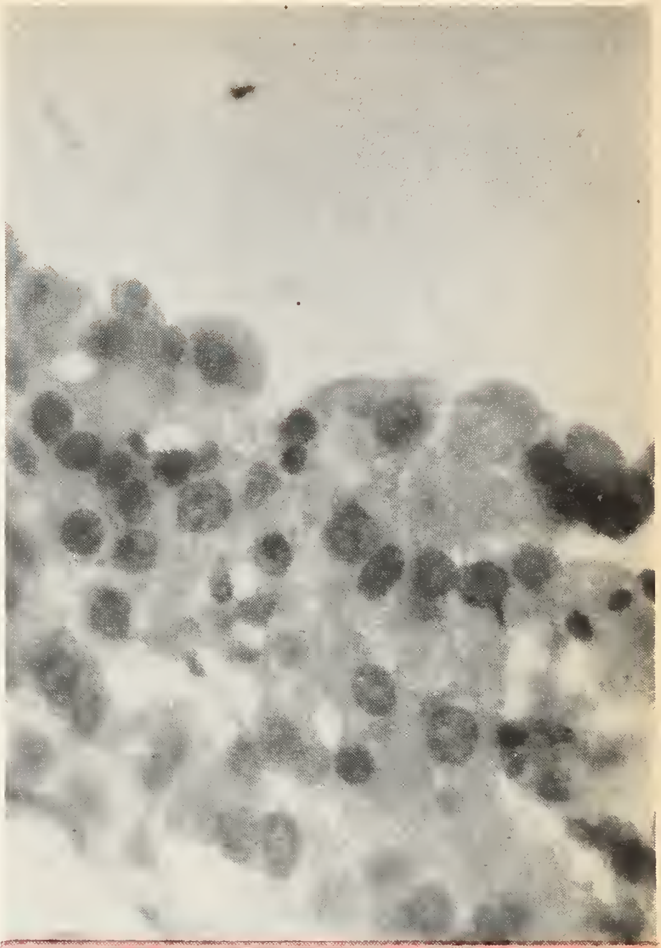

Fig. 4. Epithelial lining of the ovarian cyst. H & E stain (x 950).

# of the Newborn

The author presents an unusual tumor causing a large abdominal mass in a newborn. Only 8 others have been reported in the literature. All physicians examining patients regularly will be interested in this graphic account of a specific problem that could arise at any time during the differential diagnosis of abdominal mass in the newborn.

moveable and filled the entire abdomen; there was no pulsation. X-ray of the abdomen demonstrated a large, soft, tissue tumor mass apparently arising from the pelvis and extending into the abdomen and displacing the intestine upwards. There was a small amount of gas in the rectum and sigmoid. Subcutaneous administration of Hypaque outlined the renal shadows on both sides and there were no noted abnormalities.

The infant was placed in oxygen and a warm environment. Approximately five hours after the delivery, cyanosis developed and it appeared that the size of the abdomen was increasing. Additional x-rays demonstrated an elevated diaphragm. Because of the increasing respiratory difficulties, the infant was taken to surgery thirteen hours after delivery and a laparotomy was performed using ether and oxygen as the anesthetic agents. The abdomen was entered through a long right rectus incision extending from just below the costal margin to just above the pubis. A large tense fluid filled cyst was encountered. The cyst filled the entire abdominal cavity and measured approximately 14 cm. in diameter.

This cyst was delivered through the incision and was found to be the right ovary. The distal two-thirds of the right fallopian tube was adherent to the cyst and stretched over the surface. The pedicle was clamped and divided. The specimen was removed from the abdomen intact. The post-operative course was completely uneventful and the infant was discharged five days after surgery.

Gross examination demonstrated a cystic structure weighing 485 grams and measuring 13.7 cm. in maximum diameter. The cyst was firm and the wall was thin and translucent. The lumen of the cyst was filled with yellow watery material. The fallopian tube measured 1.9 cm. in maximum length and extended into the pedicle. The cyst contained 480 cc. of yellow watery material. Microscopic examination of the cyst demonstrated a very thin wall composed of delicate fibrous connective tissue. The lining was composed of corpus luteum cells that had indistinct cell borders and prominent nuclear structures. These cells were irregular in shape. Sections taken through the pedicle demonstrated papillary tissue that was consistent with fallopian tube epithelium.

Discussion

Abdominal masses are not uncommon in the newborn. The differential diagnosis is varied and includes every organ system. The most commonly encountered masses are as follows: mesenteric cyst, polycystic kidneys, ectopic kidneys, enlarged liver, enlarged spleen, pancreatic cyst, dilated bowel (meconium ileus, etc.), persistent urachus, bladder (often with lower obstruction), reduplication cysts of the bowel, ovarian cysts, parovarian cysts and the numerous neoplastic conditions (Teratomas, Wilm's Tumor and Neurogenic Tumor). The differential diagnosis, however, is only of academic interest. These conditions almost invariably constitute a surgical emergency because of the respiratory difficulty that is purely on a mechanical basis and because of the possibility of malignancy.

Non-neoplastic ovarian cysts are usually classified as germinal inclusion cysts, luteum cysts, follicular cysts and endometrial cysts[2]. Neoplastic ovarian cysts include the cystadenomas (pseudomucinous, serous) and the dermoid tumors. This case most probably represents one of the lutein cysts. These may be of different types: (1) cystic but normally functioning corpora lutea of menstruation or pregnancy; (2) cystic corpora lutea in which over distention is associated with cessation or disorder of function; (3) corpus luteum cyst resulting from partial or complete resorption of the blood elements in the corpus luteum hematomas; (4) corpus albican cyst rising either of the two ways described above: (5) a rare type of cyst in which the granulosa has undergone luteinization quite apart from the corpus luteum formation. The process is noted even in immature and atretic

Source of Data	Weight	Type of onset	Consistence of abdomen	Day of Surgery	Side	Size	Pathology
Bulfamonte (1942)	Not given	Difficult delivery owing to size of abdomen	Doughy	27th	Left	15x13	Simple follicle cyst
Neikirk & Hudson (1948)	2.8 kg. (6 lb., 6 oz.)	Intestinal obstruction	Sense of resistance; no discrete mass.	2d	Left	12x10 x5	Follicle cyst
Kunstadter et al (1950)	Not given	Abdominal mass without symptoms	Not given	30th	Right	10x9 x6	Simple follicle cyst
Smith (1954)	3430 grams	Abdominal mass without symptoms	Abdomen firm-not hard	10th	Right	6x5x5	Simple follicle cyst
Graves et al (1951)	2.3 kg. (5 lb.)	Difficult delivery owing to size of abdomen	Cystic feel to abdomen	2d	Not specified	11.5x8 x7	Cyst of ovary
Parry (1955)	4.0 kg. (8 lb. 15 oz.)	distention of abdomen with difficulty at delivery Respiratory distress;	No discrete mass	4th	Left	11 (diameter)	Follicle Cyst
Watson & Henderson (1955)	4320 grams	Distended abdomen; respiratory movements interfered with	Cystic mass	3d	Left	10x8x5	Simple cyst of ovary
Brune et al (1957)	2.4 kg. (5 lb. 5 oz.)	Distended abdomen; possible early intestinal obstruction	Doughy; no discrete mass	2d	Right	10 (diameter)	Theca-lutein cyst of ovary
Davis (1961)	485 grams	Distended abdomen; respiratory difficulty	Firm	13 hrs. after delivery	Right	13.7 cm. in diameter	Theca-lutein cyst

follicles. This occurs in humans especially in association with hydatidiform mole or chorioepithelioma. Huge tumors, even as large as a man's head, may be produced; these tend to disappear if the abnormal pregnancy products are removed. This may be one of the mechanisms that produce the giant cysts of the newborn. The process probably consists of luteinization of thecal cells in the immature ovary. In this case there was no evidence of maternal chorioepithelioma or hydatidiform mole.

Although it is generally stated that follicular growth beyond the primordial stage is a direct result of stimulation by the maternal hormones, Potter states that this is probably not true for she has never examined an ovary in a prepuberal child in which follicular activity was not present[3].

Brune et al in 1957, reported the eighth case of giant ovarian cyst and reviewed the literature[4].

They point out that because of the compression affect of the tumor on otner abdominal organs, extensive roentgenologic contrast studies may lead to an erroneous diagnosis and for this reason, radiologic studies with contrast mediums are not considered essential or even wise.

Summary

The ninth case of a large ovarian cyst in the newborn infant is reported. The differential diagnosis is discussed. A large mass in the abdomen of the newborn represents a surgical emergency and unnecessary diagnostic tests should be kept to the minimum. Surgery during the first twenty-four hours of life can be safely performed and good results can be expected.

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PUZZLING CLINICAL ENTITY

Two Bellevue Hospital doctors have reported on a puzzling clinical entity involving newborn babies. The two day old child squirms violently, seems hungry but ignores a bottle, screams, cries, is nauseated. Diagnosis: Drug withdrawal following birth when mother is an addict. Untreated, the mortality rate is 93 percent. Treatment is a variant on that for adults, involving use of drug substitutes, moist oxygen and nasal or intravenous feeding.

BOOSTER SHOTS RECOMMENDED

The American Academy of Pediatrics has, in the absence of final studies of the efficacy of oral polio vaccine, recently recommended that a fifth shot of Salk vaccine be given children before the age of four, and additional boosters be administered at four year intervals thereafter to age 16.

It is indeed a desirable thing to be well descended, but the glory belongs to our ancestors.—*Plutarch*

Camp Needlepoint

1960

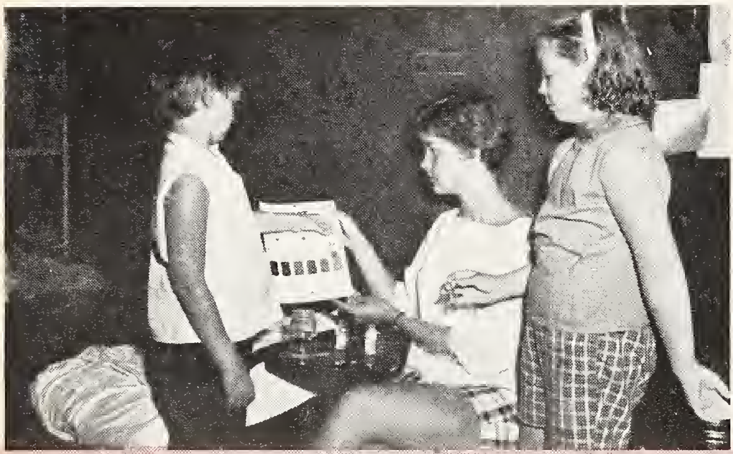

Figure I. Urine specimens were tested four times a day by each camper under the close supervision of a counselor.

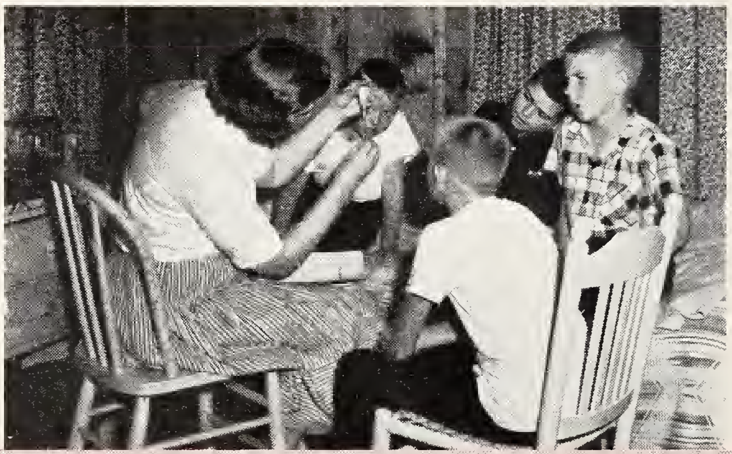

Figure II. Informal diabetic instruction was carried out effectively in each cabin.

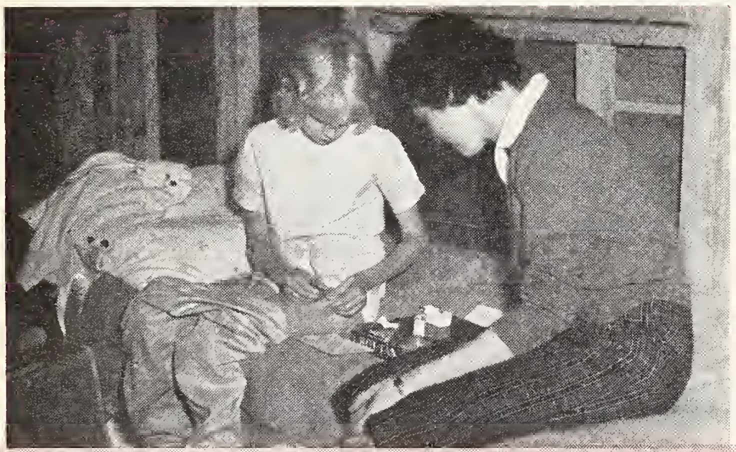

Figure III. Self-administration of insulin was encouraged among the children capable of assuming this responsibility.

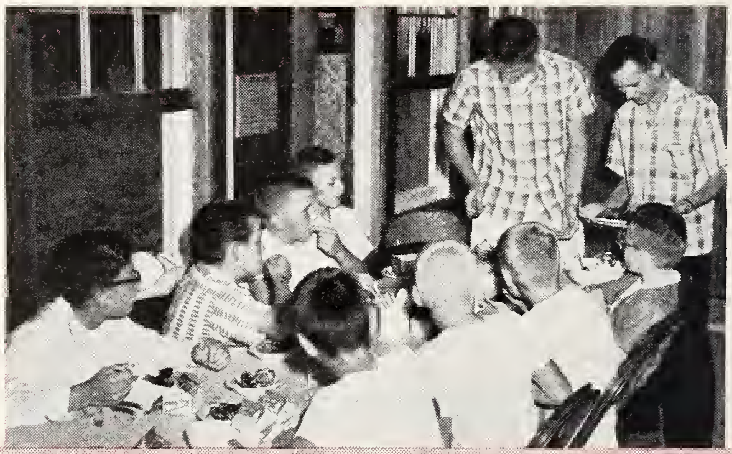

Figure IV. All diets were closely adhered to and the exchange system utilized.

Minnesota's Camp for Diabetic Children

DONNELL D. ETZWILER, M. D.
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This camp, established in 1957 for diabetic children, has not only provided a pleasant outdoor experience for the youngsters but has served to promote diabetic education of the children, their parents, attending doctors and paramedical personnel. Further, the accumulation of such large numbers of similarly afflicted children has facilitated social research into the problems confronting the juvenile diabetic.

Camp Needlepoint is a camp in Minnesota for diabetic children established in 1957 under the auspices of the Twin City Diabetes Association. The name was suggested and chosen by popular demand of the 21 children at the first encampment. Since 1957 the size of the camp has steadily increased, and it was possible to accommodate 74 boys and girls in the summer of 1960. These campers came from a variety of racial, religious, and socio-economic backgrounds in Minnesota and neighboring states. The common bond which united these young campers was their diabetes mellitus.

The site of Camp Needlepoint has varied according to its requirements and the availability of facilities. For the past two years it has been held at Big Lake, Minnesota, where Camp Wells was kind enough to prolong their season and accommodate the diabetic camp. Because of limited funds, facilities, and applicants, the camping periods have extended only 7 to 10 days. As the camp becomes more widely known and its value recognized, it is hoped that these periods may be prolonged, thus permitting more diabetic children to participate in an active, outdoor, summer program.

This work has been supported in part by the St. Louis Park Medical Foundation.
St. Louis Park Medical Center.

Initially, Camp Needlepoint was established to provide a camping experience for diabetic children. In 1960, however, it was decided that the purpose of the camp should be broadened to fulfill the following objectives: (1) provide a camping experience for diabetic children; (2) further instruct diabetics, their parents, medical and paramedical personnel in the proper care of diabetes mellitus; and (3) serve as a research tool, enabling us to gain some insight into the difficulties and problems encountered by the juvenile diabetic.

These objectives were achieved in the following manner:

Camping

In August, 1960, Camp Needlepoint rented the facilities of Camp Wells and utilized most of their personnel. Camp Wells is a member of the Minnesota Camping Association, a section of the American Camping Association; thus the camp complies with all of the national, state and local laws applicable to camps and their personnel. The management of such a large group of diabetics necessitated the following additional personnel: eight cabin counselors (all of whom were diabetics), an assistant camp director, two dietitians, a diatetic intern, two registered nurses, and a physician. Approximately ten campers were housed in each of the eight cabins. Every cabin was supervised by two counselors: one from the Camp Wells staff familiar with the camp and its facilities, and one counselor who was a diabetic and thoroughly familiar with the disease. All of the opportunities and activities available to children during the regular camping period were utilized by the diabetic campers. Swimming, boating, fishing, baseball, volleyball, handicrafts, singing, nature hikes, cook-outs, and overnights were only a few of the activities in which the diabetic campers engaged. No difficulties were encountered in allowing this group of children to participate in such wide and varied activities. Most activities were encouraged on a cabin basis, and thus permitted utilization of time and facilities according to the age, sex, and interests of the children in each cabin. It was felt that such a program promoted closer friendship among the children and permitted better observation, supervision, and assistance to the individual camper.

Education

It was imperative that the camp routine incorporate an ideal diabetic-care program which would serve as a model for home care. This program was inaugurated for the first time in the summer of 1960 and campers were encouraged to take an active part in the care of their diseases. The degree of this participation varied with the individual child and was influenced by his age, maturity, the duration of his disease, and his previous learning experiences. Upon arriving at camp, each camper was given a "Diabetic Kit" which contained the following:

A sterile insulin syringe.
A three-ounce medicine bottle filled with alcohol in which to keep the syringe.
Seven sterile disposable needles.
One or more bottles of the appropriate insulin.*
A urine testing kit.**
A urine specimen bottle.
A booklet about diabetes.*
A pencil and printed card to record the results of the urine tests and insulin dosage.

Each cabin received a "Counselor's Kit." This contained: isopropyl alcohol, cotton balls, Clinitest tablets**, acetone tablets**, extra urine droppers, specimen bottles and test tubes. Thus, each camper in each cabin was completely equipped to test his own urine under the direct supervision of a diabetic counselor (Figure 1). Testing was done four times a day and the results recorded by the camper on his individual record card and also on a master record maintained by the camp physician.

Insulin-administration, urine-testing and diabetic instruction were carried out according to the following camp schedule:

6:30—7:00	Reveille—campers arose, voided, and discarded specimens (except in cabins with youngest children where the first specimen was saved until it was certain a second could be obtained). Campers then washed, made beds, and cleaned cabins.
7:00—7:15	A second urine specimen was obtained and tested for sugar. (all 4 plus urines were tested for acetone)

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* Supplied by Eli Lilly and Company
**Supplied by the Ames Company, Incorporated

7:00—8:00	Physician and nurses visited each cabin. Individual insulin needs were determined and campers were assisted in the administration of their insulin.
8:00	Breakfast.
9:30—10:00	Diabetic instruction period for Group I.
10:30—11:00	Diabetic instruction period for Group II.
11:00	Snack (included carbohydrate for all swimmers).
12:15	Urine testing (all campers with 4 plus sugar and acetone reported to infirmary).
12:30	Lunch.
1:30—2:30	Rest period (nurses visited one cabin each day and conducted informal diabetic instruction during this period) (Figure II).
4:00	Snack (included carbohydrate for all swimmers).
5:15	Urine testing (all campers with 4 plus sugar reported to infirmary).
5:30	Supper.
8:15—9:00	Evening urine check and bedtime snacks.
8:45—9:30	Lights out according to age groups.

Immediately after the morning specimens were tested the camp physician and the nurses visited every cabin. It was the responsibility of the physician to determine each camper's insulin requirement for the day. This was done with the assistance of the child who checked his own record card while the physician reviewed the master record; thus, a daily routine activity was converted into an effective informal training session. As soon as the insulin dosage was decided, the child prepared his needle, syringe, and insulin for the injection. Younger campers were shown how to measure and inject their insulin; older children were required to have their dosage checked before self-administration (Figure III). Before lunch and supper specimens were again checked, and all children showing 4 plus sugar and acetone reported to the infirmary where they were evaluated by the camp physician. Prior to bedtime a fourth urine specimen was tested and all campers then went to the mess hall. There they reported their urine results for the day, and with the assistance of the physician determined their individual bedtime snack.

Meal planning, preparation, and serving required a great deal of time and effort by the dietary staff. Most of the children had been placed on diet by their own physicians and these had to be adhered to if ideal care were to be fostered. Accordingly the dietitians reviewed each camper's diet prior to camp and printed the exchange diet on small cards encased in plastic. These cards were then placed at the head of each dining table and utilized by the counselor as he apportioned the food (Figure IV). The children were urged in an informal way to learn food exchange values and were permitted to substitute equivalent foods. Dietary changes were made upon request of the campers and recommendation of the physician.

Instructing the children about diabetes was not always done on an informal basis. Each day the children attended one formal 20-30 minute instruction period on diabetes and its care. Filmstrips prepared by the Federal Security Agency of the United States Public Health Service were used and found to be most effective. These held the attention of all the children and served as a stimulus for further group discussions. Some of these filmstrips were also shown to the children's parents the first day of camp. This was part of an extensive workshop program for the parents which was designed to educate them as well as to obtain certain information from them.

In addition to educating the children and their parents, Camp Needlepoint served as an excellent teaching experience for the student nurses from three nursing schools in Minneapolis. Each day a group of 5 to 7 student nurses arrived at the camp at 6:30 a.m. and then "rounded" with the camp staff. They observed the procedures and assisted many of the children with the administration of insulin. After this they ate breakfast at the diet tables with the campers. There was then a discussion period with the camp physician followed by their attendance at the lectures for the children. After lunch the students accompanied the staff nurses to one of the cabins and observed another informal instruction period. Their visit was concluded by a discussion about the dietary management of the children with one of the camp dietitians.

In addition to the nursing students, the camp was visited by personnel from the University of Minnesota, the Minnesota State Health Department and the United States Public Health Service. Thus, Camp Needlepoint served as an educational experience for the campers, their parents, and a large group of medical and paramedical personnel.

Research

The opportunity of having seventy-four juvenile diabetics grouped together is indeed a rare one and invites investigative projects. We know that diabetes occurring in children is frequently the most difficult to control. Although this, in part, may be the nature of the disease, there are obviously certain other factors such as social, emotional, family and child variables which definitely influence this course. In an attempt to gain some insight into these factors the following studies were carried out:

1) The parents of the 74 diabetic children were asked to complete extensive questionnaires pertaining to the child, his family and the course of the disease.

2) The teachers of these children were contacted and asked to evaluate the diabetic child in school; the social, emotional, and academic standings were all considered.

3) Information was obtained from the child's physician concerning the control of the child's disease, the attitudes of the patient and his parents, and the possibility of other associated conditions.

4) The cabin counselors were asked to submit written reports regarding the conduct, attitudes, social acceptance, and self-care of all the campers.

5) The children's knowledge of diabetes was appraised by asking them to complete a questionnaire covering the fundamentals of the disease.

6) A workshop was conducted and the parents of the children were asked to complete the following:

a) A questionnaire on diabetes mellitus.
b) A vocabulary intelligence test.
c) An objective personality inventory (M.M.P.I.).

The results of the information obtained from the children, their parents, teachers, counselors, and physicians are being analyzed at the present time in an attempt to gain further understanding of the juvenile diabetic and his disease.

Camp Needlepoint will again be held at Big Lake, Minnesota in the summer of 1961. A program similar to the one described here will be conducted. Any diabetic child from 7 to 17 years of age may attend and applicants are accepted on a first-come basis. Further information regarding the camp may be obtained by writing the author or the Secretary of the Twin Cities Diabetes Association, 5225 Minnetonka Boulevard, Minneapolis 16, Minnesota.

Summary

Camp Needlepoint is a camp for diabetic children in Minnesota. The purposes of the camp are (1) to provide a camping experience for juvenile diabetics, (2) to promote the diabetic education of these children, their parents, medical and paramedical personnel, and (3) to gain some insight into the problems of a child with diabetes. This paper discusses how these objectives are achieved.

MECONIUM ILEUS SYNDROME

This syndrome, which occurs in the newborn, is characterized by intestinal obstruction caused by an abnormally thick and tenacious meconium, quite unlike ordinary meconium. Landsteiner in 1905 first referred to the syndrome, which is relatively rare.

Symptoms that occur in the first 24 hours of life consist of abdominal distention, bile-stained vomitus, and failure to evacuate meconium. The impacted mass may be localized in the lower ileum, in the colon, or may fill the entire intestinal tract. Loops of distended bowel are usually palpable. Barium enema studies may reveal a characteristic long, smooth, ribbon-like colon that expands into a dilated proximal segment, often in the region of the splenic flexure.

The syndrome is quite regularly associated with cystic fibrosis of the pancreas and is attributed, although not proved, to decreased or absent pancreatic ferments.

Surgical resection of the meconium-containing loop of bowel is frequently necessary in severe cases.

Robert H. Durham, M. D.

Abstracts and Briefs

INFANT HERNIA REPAIR

Artificial pneumoperitoneum has been utilized in the past for enlarging the peritoneal cavity prior to repairing large hernias and eventrations in adults. Preoperative preparation in this manner has proven its usefulness in such cases where the hernias have lost the "right of domicile" within the abdomen.

The application of this principle was used by the author to prepare an infant for secondary closure of a congenital omphalocele. Cutaneous coverage of the hernial sac had been carried out as the initial operation six hours after birth. At ten and a half months the fascial margins could be approximated manually over the reduced hernia only with considerable tension. Reduction could not be maintained with a binder and the child was uncomfortable with it so its use was discontinued after nine days.

Pneumoperitoneum was then instituted in which 1500 cc of air was introduced in 250 cc increments over a week's period of time. By instillation of this amount, the intraperitoneal volume of air exceeded the volume of the hernia. Roentgenographic examination proved to be the best method of confirming the relative volume of intraperitoneal air to volume of hernia.

Although the abdominal cavity became larger the hernial sac did not increase in size. As a result, at the end of the week of preparation, a tensionless fascial closure of the defect was possible resulting in an uncomplicated post-operative course.

It is interesting that readjustment in the capacity of the abdominal cavity occurred to such an extent after a period of only one week. If further experience with this technique confirms its usefulness it would be a welcome addition to the methods for handling this distressing problem.

Harold D. Kletschka
Syracuse, New York

Spratt, John S., Jr.: Artificial Pneumothorax. Efficacy in Enlarging the Peritoneal Cavity for Early Secondary Closure of Congenital Omphalocele. The American Journal of Surgery, 101:375-377, March, 1961.

EARLY POST-OPERATIVE PERISTALSIS

Treatment of adynamic ileus, a life threatening complication of many surgical procedures, is primarily expectant and supportive. Para sympathomimetic drugs and enemas are of inconsistent value. Such ileus is the result of variable combination of automatic factors and injury to the intestine. Stress is followed by increased intestinal elaboration of acetyl-choline d-pantothenyl alcchol.

A preliminary laboratory study utilizing mongrel dogs was devised by the authors[1]. Using light sodium-pentothal anesthesia, a 5 mm lead marker was placed in the stomach of each of 15 dogs through a small gastrotomy. In alternate animals the small intestine was stripped twice through gloved fingers and exposed to air and the operating light for twenty minutes. All animals were then allowed to take fluids and standard diet as desired, and were examined by flouroscopy every 24 hours, until the marker was evacuated.

All the 8 controlled animals passed the marker in less than 48 hours. Only one of the 7 dogs with ileus passed the marker in less than 48 hours, four passed the marker in less than 96 hours, and all seven in less than 120 hours.

This procedure for producing experimental ileus was therefore accepted as a basis for a double blind study of d-panththenyl alcohol (Ilopan) and a placebo. Forty-one animals underwent the ileus producing method described above. After operation dogs selected at random were given intra-muscular injections of 0.08 milimeters per kiligram of solution of either ampule A or ampule B, twice a day, until the lead marker was passed, as proved by flouroscopy.

After this series of experiments had been completed, it was apparent that there was a significant difference in the duration of the ileus between the dogs receiving ampule A as compared to those receiving ampule B. The study was stopped and the ampules decoded and B proved to be the placebo. There were 20 dogs in the group receiving the placebo; 3 passed the marker within 48 hours, 7 within 72 hours, and 11 within 96 hours. There 21 "treated" dogs; 9 passed the marker in less than 48 hours, 14 in less than 72 hours, and seventeen (17) in less than 96 hours. The difference between the two groups of animals is significant at the 5% level for the 48 hour periods and 1% level for the 72 hour period.

Following stress there may be an increased utilization of d-pantothienyl alcohol in the production of the acetylcholine. Relative deficiencies of d-pantothenyl alcohol could result in an intestinal atony under such circumstances. A significant period of adynamic ileus was readily produced in the dog by relatively minor physical trauma to the intestine and peritoneum.

Conclusions suggested by this study cannot arbitrarily be transferred to man. (However, in humans, Bean in extensive research noted a fall in acetelylation during experimental pantothenic acid deficiencies). This work was especially interesting because it is a well controlled double blind study measuring the effect of a product about which there has been much discussion without evidence of its' effectiveness.

Roger C. Murray, M. D.
St. Paul, Minnesota

(1) Double Blind Study of the Effect of d-pantothenyl alcohol on Experimental Ileus.
Michael A. Polacek, M. D., A. Stephen Close, M. D., Edwin H. Ellison, M. D. F.A.C.S. Surgical Form, Clinical Congress, 1960, Volume XI, pages 325-327, San Francisco: American College of Surgeons, 1960.

ACUTE PYOGENIC PAROTITIS

Sixty years experience covering 118 cases of parotitis primarily treated at Barnes and Washington University Hospitals in St. Louis provide a very timely review of the often lightly regarded problem of "surgical mumps." The author emphasizes that, contrary to common opinion, this is not a vanishing disease. Pyogenic parotitis did, however, become almost non-existent in surgical cases in the period 1940 to 1950. It is felt that the decrease resulted from the impact of new antibiotic therapy, which was almost routinely used at that time.

Bacteriological identification was established in 86 instances. This phase of the study revealed a resurgence of antibiotic resistant staphylococcus aureus in the 1952 to 1959 era. There was a 31% mortality in these patients.

Physiologically, stagnant salivary flow in the parotid duct and contamination with pyogenic, gram-positive coccal organisms appeared to be the combination of factors etiologically responsible for most cases of pyogenic parotitis. It is suggested that physiological resumption of salivation was most important in the subsidence of cases caused by other than staphyloccus aureus.

Statistical analysis of the various therapeutic modalities employed indicates that none of them really influenced the frequency of septic complications of the infection, with the one exception of external surgical drainage of staphyloccus aureus parotitis. This remains the most consistently beneficial method of treatment of this specific type of parotitis.

In the detailed therapeutic recommendations, prompt bacterial identification when the diagnosis is made, and institution of appropriate antimicrobial agents is emphasized. Local hygienic measures, and restoration of normal fluid, electrolyte and blood volume status is similarly discussed. The Byars technic of surgical drainage is clearly described.

Periodic reappraisal of surgical problems, even when involving non-controversial subjects, will not infrequently reveal the need for adjustment of long-held concepts. Apparently the drug-resistant staphylococcus will necessitate a new focus of attention on the occurence of surgical parotitis. This timely review would also tend to shake one's confidence in the use of radiation therapy for this disorder. A renewal of respectful alertness to the adverse potentials of a supposedly conquered complication may well be currently in order.

Robert N. Hammerstrom, M. D.
Minneapolis, Minnesota

"The Etiology and Therapy of Acute Pyogenic Parotitis" Spratt, John S. S. G. and O., 112-391, April 1961.

NYLON IN HERNIA REPAIR?

Results in hernia repair employing two different techniques with three sizes of nylon knits (thin, medium and heavy) are reported.

It would appear that the thin net has the approximate filament and pore size as Marlex mesh available in this area. The thick net has filament and a pore size approximately twice that of the thin net and the medium net falls somewhere in between.

Two different operative techniques were employed. The thin net was used as an inlay prosthesis, being sewed beneath the cord from the shelving edge of Poupart's ligament to the free edge of the conjoined tendon as a substitute for repair of the inguinal floor. It was used in 86 herniorrhaphies, 50 indirect, 14 direct and 22 recurrent, with a wound infection rate of 4% and a recurrence rate of over 20%. It was abandoned.

The thick and the medium nets were used as onlay grafts, being sewn from the shelving edge of Poupart's ligament to the superficial surface of the conjoined tendon and internal oblique muscle one inch above its free margin. The cord was brought out beneath the lower edge of the net half-way between the pubis and the anterior superior iliac spine. The external oblique aponeurosis was closed over the reconstructed canal. Results with the thick net were disastrous. In 15 cases, 8 became infected, and the procedure was abandoned. The medium net was used in 212 henriorrhaphies, 110 of which were indirect, 68 direct and 34 recurrent. One hundred ninety-four healed per primam, 13 were delayed, and 6 suppurated. One hundred ninety-four of the 212 cases were followed for 2 years with 10 recurrences noted. The recurrence rate, then, would range from 4.7% to 12.7% depending on how many of the untraced cases recurred.

The authors feel that nylon is handled as a slightly irritant foreign body when implanted in living tissues, and that several of their unsatisfactory results were due to the implantation of more than the critical weight of nylon into a limited area of tissue. They conclude that a medium sized nylon net may prove a useful addition in the repair of inguinal herniae.

This article is of interest in three respects. First, it is a tribute, albeit oblique, to the tenacity of character of the authors. They persisted in pursuing a procedure giving bleak results far longer than would most American surgeons.

Second, the sepsis and recurrence rate reported using this technique I would judge unacceptably high. The complications recorded are frequent enough to make the surgeon chary in employing some form of prosthesis or another in a difficult repair where tissues are attenuated or scarred. When one contrasts the results reported here with the excellent results in herniorrhaphy reported by Varco and Ferguson, who employ the McVay technique, there is little doubt that a McVay repair properly performed, has more to recommend it than inlay or onlay grafts of nylon fabric.

Third, the authors' mention of the acceptance or rejection of an inert prosthesis on a basis of total amount of mesh inserted is pertinent in view of a recent paper indicating that pore size of synthetics has a great deal to do with the ultimate fate of an inert prosthesis in tissue.

John A. Culligan, M. D.
St. Paul, Minnesota

Doran, F. S. A., Gibbons, R. E., and Whitehead, Raymond. The British Journal of Surgery, Vol. 48: 430-434, January 1961.

COMPLICATIONS OF CAROTID MANIPULATION

Palpation, massage and compression of the carotid artery in the neck are commonly performed and often considered innocuous procedures.

Calverley and Millikan report on four patients in whom such procedures were associated with the production of focal neurologic signs presumed to be ischemic. They discuss the possible mechanisms and conclude that the cerebral infarction is the result of manual occlusion of the carotid artery, of embolization of dislodged atheromatous material or by local trauma to vessels with subsequent carotid thrombosis.

R. G. Siekert, M.D.
Rochester, Minnesota

Calverley, J. R. and Millikan, C. H.: Neurology, 11:185 (March) 1961.

Book Reviews

HANDBOOK OF PEDIATRICS, FOURTH EDITION —Henry K. Silver, C. H. Kempe & Henry B. Bruyn— Lang Medical Publications—Price $3.50.

This publication is exactly what the title would imply, a handbook. It was not meant to be or should it be considered a textbook, but contains 552 pages packed with gems and pearls referrable to the field of Pediatrics that the practitioner is seldom expected to remember but often called upon to use. The information and data is presented in outline form and the authors make use of diagrams and charts in a graphic presentation. It has an excellent index which is invaluable in a publication of this type. I believe that its construction is better than most handbooks with an attractive leatherette covering that should stand considerable abuse. The printing is necessarily small, and for this reason it may be difficult for some to use. In my opinion, it would be highly recommended for medical students, interns, residents, and as a ready desk reference for practitioners.

C. R. Peluso, M.D.
Minneapolis, Minnesota

AN ATLAS OF ACQUIRED DISEASES OF THE HEART AND GREAT VESSELS—Jesse E. Edwards, M.D., Consultant, Section of Pathologic Anatomy, Mayo Clinic, and Professor of Pathology, Mayo Foundation, Graduate School, University of Minnesota, Rochester. With the Assistance of Henry N. Neufeld, Raymond D. Pruitt, Robert Parker, and Howard B. Burchell. Three volumes, 1437 pages, 4392 illustrations on 2333 figures. W. B. Saunders Company, 1961—Price $70.00.

In this three volume Atlas, Doctor Edwards has correlated the functional and clinical manifestations of the acquired forms of heart disease with pathological anatomy. This correlation has been accomplished with great skill by presenting succinct clinical data, representative roentgenograms and electrocardiographic tracings in conjunction with necropsy findings of individual patients. The illustrations in this atlas clearly demonstrate the value of the visual medium as a mechanism of transmitting to others the significant observations made during autopsy examinations

Volume I is devoted to "Disease of the Valves and Pericardium." The major subdivisions are: Rheumatic Carditis (217 pages), Bacterial Endocarditis (146 pages), Miscellaneous Affections of the Endocardium (18 pages), Calcification of the Mitral Ring (6 pages), and Pericardial Disease (93 pages). The patterns employed to establish the correlations between clinical observations and the necropsy findings in the cases presented is varied. There is no monotony due to repetition of the same plan over and over again. At times physiological data from catheterization observations is employed. Though gross photographs of the dissected heart constitute the major means of illustration, a wide variety of photomicrographs, sketches and diagrams are included.

Volume II of the Atlas deals with Coronary Arterial Disease (215 pages), Systemic Hypertension (85 pages), Acute and Chronic Myocardiopathy (43 pages), The Heart in Systemic Disease (59 pages), and Acute and Chronic Cor Pulmonale (85 pages). The methods employed to illustrate the correlations between clinical and physiological data and autopsy observations are admirably suited for a discussion of coronary arterial disease. This section is very informative. The author includes many illustrations of the pathological changes in other organs and tissues in order to bring to the reader a composite picture of these diseases.

Volume III of the Atlas is entitled "Diseases of the Great Vessels." It deals with conditions affecting the aorta and its primary branches, the venae cavae and its primary tributaries as well as with diseases of the pulmonary arteries and veins and the portal venous system. The major subdivisions are as follows: Atherosclerosis of the Aorta (80 pages), Dissecting Aneurysm of the Aorta (98 pages), Diseases of the Branches of the Aorta (72 pages), Disease of the Pulmonary Arteries (8 pages), Diseases of the Veins (95 pages), and Diseases of the Thoracic Duct (3 pages). As an example of the manner in which the author describes a given subject, the section dealing with dissection of aortic aneurysm might be cited. The background of the disease is first covered by illustrations and discussions of examples of systemic hypertension, coarctation of the aorta, instances of Marfan's syndrome (arachnodactyly and the relationship of atherosclerosis, and dissecting aneurysm of the aorta. Doctor Edwards is very emphatic regarding the latter point. Although aortic atherosclerosis is often present in instances of dissection, the two processes are regarded as quite independent. He states the widelv held viewpoint viz., that atherosclerosis represents the major background for dissecting aneurysm—is incorrect. The features of dissecting aneurysm of the aorta are then depicted by a series of illustrations, diagrams and photomicrographs. Next the fate of the patient is depicted by photographs of pathological specimens indicating the effects of the dissecting aneurysm. Finally the healed stage is dealt with by suitable illustrations. Thus the reader is afforded a comprehensive view of the entire subject by means of a variety of visual aids. The section dealing with diseases of the branches of the aorta contain examples of a number of unusual conditions, many of which should prove interesting and instructive to surgeons in particular.

The final section in Volume III deals mainly with diseases involving the inferior and superior venae and the portal vein. The section on disorders of the portal vein is beautifically illustrated; it is a pleasure to have new photographs introduced in the medical literature. To prove that some illustrations cannot be improved upon, the familiar drawing of the collateral circulation in obstruction to portal venous flow, first published by McIndoe in 1928, is reproduced as Figure 2252.

When one contemplates the 2333 figures in this Atlas — and many of them represent two separate illustrations — one can appreciate what an accomplishment this work represents. Great credit is due, and has been accorded in the preface, to the photographers who prepared the illustrations. The problem of two dimensional limitation inherent in conventional photography is a handicap in depicting three dimensional structures such as the heart, its valves and vessels. The superb illustrations in the Atlas of Acquired Disease of the Heart and Great Vessels reveal how this handicap can, in great part at least, be overcome by skillful photography. In the preparation of the text, the author has had the assistance of the clinical colleagues listed in the title pages. The help of Doctors Wood and Kincaid in the fields of physiology and roentgenology is cited in the acknowledgements. The three volumes, although dealing with pathology and prepared by a pathologist cover a far wider field than just morbid anatomy.

The Atlas can be highly recommended to the medical profession at large. The author's hope that the work will achieve recognition as an instrument of education seems destined to be fulfilled. This reviewer, concerned with the problem of medical education at the undergraduate and graduate level, realizes the need to accord the student a source material where he can obtain broader coverage of a subject than classroom instruction or short ward assignments offer. The practice of teaching by correlation, so well organized in the present volumes, gives a dynamic quality to the study of human pathology.

The three volumes are well bound, attractively printed and completely indexed in each separate book. References are cited directly in the body of the text as an aid to the reader. The present work is far more extensive than the 1954 Atlas of Congenital Anomalies of the Heart and Great Vessels by Edwards et al. though it follows a similar pattern. This set has a great deal to offer to physicians, surgeons, roentgenologists and pathologists. It represents a form of medical literature that will not rapidly become outdated.

F. W. Hoffbauer, M.D.
Minneapolis, Minnesota

LOSE WEIGHT AND LIVE—Robert P. Goldman—Doubleday & Co., Inc., 1961.

Successful weight reduction through dieting requires more than "a casual calorie counting" approach to be successful. This interesting and entertaining book by an "Ex-fatman" points up the need for a complete re-orientation of a person's emotions, drives, and concept of food if dieting is to be successful.

Mr. Goldman has drawn liberally upon published material and personal discussions with many of the country's leading authorities in the problem of nutrition and weight control. Many of the ideas he emphasizes are known to physicians but they are not placed properly in order of importance to influence the doctor to the maximum degree. In the area of motivation, alone, Mr. Goldman speaks out clearly and entertainingly.

The reader immediately realizes the futility of any weight reduction effort without a motivation strong enough to overcome tremendous physical and emotional pressures. However, Mr. Goldman has provided an excellent analysis of what constitutes proper and adequate motivations, and how they might be stimulated within various types of "fattys." This small but informative book should be a must for every physician who has "fattys" in his practice. And what physician doesn't? Realizing that one out of every two men above the age of 30 is 10% or more over his desirable weight, and that one in every four men is 20% over his desirable weight, the magnitude of the problem is apparent. As men and women move into their later years, the overweight percentage is increased and the problem looms large for all physicians. The reviewer would encourage physicians to use this book as a starting point for any patient who manifests a desire to lose weight, or, for that patient in whom an adequate motivation is to be attempted. An entertaining and effective book for any physician to recommend to his overweight patients.

Claude R. Hitchcock, M. D.
Minneapolis, Minnesota

THE HUMAN FRAME—Giovanna Lawford—Doubleday & Company Inc., 1961. Page 106. Price $.95.

This is a pocket-size book illustrating all of the bones of the body with free hand line drawings. A short narrative description of each bone or sets of bones is given. Suitable for family or elementary students.

Carl O. Rice, M. D.
Minneapolis, Minnesota

MANAGEMENT OF FRACTURES, DISLOCATIONS, AND SPRAINS—Key and Conwell—7th Edition—C. V. Mosley Company—1961.

This classic volume, now 27 years old, was revised for the seventh time and reborn in February, 1961. The book aptly covers numerous common and uncommon injuries to adjacent soft tissue structures to skillfully weave brief word pictures of the respective injury, its diagnosis and its treatment.

Redundant words, phrases, and sentences padding the script are happily absent allowing the student, generalist, surgeon or orthopedist rapid access to the meat of the injury in question. Not as all-inclusive as most orthopedic texts in including numerous methods of treating a given condition, its aim seems to be mainly to promote rational conservatism most suited for the treatment of the average case by the average practitioner. It generally presents the most efficacious acceptable method to obtain the best functional result. As such it should be an invaluable consultant to the generalist or less experienced specialist or, indeed, it could be an excellent silent partner for anyone apt to encounter these injuries.

As a silent partner this classic can alert one to possible troublesome situations to be avoided by less experienced practitioners, who thus forewarned should seek appropriate consultation. In general, however, this book is intended to be an aid rather than a discouragement to practitioners, who thus forewarned should seek appropriate consultation. In general, however, this book is intended to be an aid rather than a discouragement to practitioners who enjoy this work. As such it should make the **MANAGEMENT OF FRACTURES, DISLOCATIONS, AND SPRAINS** much more enjoyable through a positive approach with confidence, through the willed knowledge and experience of J. Albert Key, M.D. to whose memory this edition is commemorated.

Lumir C. Proshek, M.D.
Minneapolis, Minnesota

President's Letter

YOUR A.M.A. REPRESENTATIVES

Your State Society was well represented at the recent annual A.M.A. meeting in New York. We wonder if the membership realizes how fully occupied your delegates are at these sessions, as they fulfill their obligations. On the other hand, we feel the membership deserves an accounting also.

About two weeks prior to the departure time for New York, a large packet arrived from the A.M.A. headquarters containing four large booklets of information, pertinent to the meeting, which your delegate must digest before leaving the **tranquility** of his busy office. As he looks at the contents, he notes that this packet comprises approximately 400 pages of printed material. To be of any value to his State Society at the national level, he must know of their contents. Armed then with this knowledge, he departs.

He arrives early Sunday so he'll be ready to attend the Annual Conference of State Presidents and Officers that afternoon. This meeting is a most pleasant prelude to the week's work ahead which is to start the following morning.

So at 10 A. M., Monday your delegate sits down with the other States' Representatives, making up the total of 216 voting members. This is the body which carries out the business of the A.M.A. After the usual formalities, the delegates note that they are confronted with the largest number of resolutions to be introduced at any annual meeting. The list is a formidable 114, together with the large number of Reports of the Trustees. The resolutions and the Trustees' Reports have to be referred to the proper reference committees for recommended action. After the last resolution has been individually introduced in this session and assigned, your delegate looks at his watch. He finds it is 5:20 P.M. Thus ends his second day.

The chairman of the Minnesota Delegation has called a breakfast meeting for 7:30 A. M. on Tuesday morning for a discussion of the resolutions and reports to ascertain the viewpoints of his fellow delegates on all issues proposed. Our delegation does not vote as a unit, so differences of opinion were evident and healthy. The various members of the delegation, including the alternate delegates, were assigned to the various reference committees' hearings, to present and defend Minnesota Viewpoints. These hearings started at 9:00 A. M., and lasted on the average, to 4:30 or 5 P.M. It was a pleasure and a tribute to note that the Minnesota delegation not only participated, but contributed constructively.

The House of Delegates re-convened on Wednesday A.M. to hear the reports of the reference committees, and to vote on their recommendations. This business was still in process when the Speaker adjourned the House at 5:20 P.M. to re-convene at 9:00 A.M. Thursday morning.

Previous to the 9:00 A.M. Thursday session, our delegation again met at a 7:30 A.M. breakfast to caucas the delegation on the various candidates to favor for the elective offices. When the business of the House was completed that day, the clock said 1:45 P.M. Now your delegates were on their own time; to pursue their scientific bends; to pick up what loose ends they could before the meeting closed the following noon.

We hope this expose of your delegates' lives has been illuminating. Their presence was felt at this meeting. You were well represented. They in turn felt well compensated for their time when you demonstrated your confidence by giving them this responsibility. It was a different kind of pleasure than that voiced by their envious office staff and associates on their departure when they sent them off with this admonition; "Have a good time at the meeting."

C. L. Oppegaard

President Minnesota State Medical Association

Editorials

ELECTROPHORESIS

The appraisal of basic research often seems difficult to persons outside the scientific community. It may appear ill-defined, without overt purpose or goal. The scientist himself is guided by his intellectual curiosity and may find it difficult to define a precise goal for his studies. Few are able to predict the practical value of their work. Many procedures and methods, which are indispensable for the practice of modern medicine, originated in basic experiments which at the time showed little promise for "practical" application.

The history of fractionation of colloids by means of electrophoresis is but one of many examples. Early investigators, like Reuss over 150 years ago or Hardy in 1905[1], did not anticipate the clinical application of their experiments. Even Konig[2] could not foresee future developments when, in 1937, he separated pigments of snake venom by means of an electrical field on a supporting medium of filter paper. In the same year Tiselius[3] introduced important improvements to Hardy's early method of electrophoresis by means of moving boundaries in a liquid medium. He was unaware of the clinical potential of the method, and human plasma and serum became objects of his early investigations by electrophoresis. Serum antibodies were readily recognized in the gamma globulin fraction of immune sera. Others, using Tiselius' method of free electrophoresis, made important contributions to the recognition of the nature and mechanisms of diseases like multiple myeloma, macroglobulinemia, nephrotic syndrome, hepatocellular disease and others. Agammaglobulinemia was discovered as a heretofore unknown entity. Electrophoresis by free boundaries in a liquid medium still remains a standard tool for the investigator; however, it is too tedious for the clinical laboratory and does not lend itself to the examination of large numbers of specimens.

It was not until 10 years after Konig's experiments that his work was remembered and extended by Wieland[4] and Durrum[5]. Soon it was forged into a practical tool which has conquered the clinical laboratories as paper electrophoresis. With the common use of this method the dysproteinemias and paraproteinemias could be readily detected. Paper electrophoresis also proved to be helpful in the evaluation of other pathological states, infectious diseases, lymphoblastomas, diseases of hypersensitivity, familial amyloidosis, malignancies and many others. Additional abnormal states were uncovered, such as the absence of beta globulin with consequent refractory iron deficiency anemia, and congenital and hereditary absence of albumin. New staining methods made possible the electrophoretic evaluation of carbohydrates and lipids in human serum and biologic fluids.

While free-boundary electrophoresis permitted the recovery of several of the plasma proteins in the undenatured state, the amounts involved were of necessity small. Filter paper electrophoresis denatures the separated proteins by heat coagulation and thus does not lend itself to the recovery of undenatured serum protein fractions. The use of starch granules[6] or starch gel[7] as supporting media resulted in the recovery of considerably greater amounts of these fractions, which in turn provided the material for further investigative studies. Durrum[8] adapted paper electrophoresis to the paper-curtain method of continuous flow electrophoresis, a two-dimensional system consisting of a gravitational flow component, modified by an electrical crosscurrent. The method of electrophoresis-convection separated protein fractions by means of changing pH in an electrical field. Electrophoresis on diethylaminoethyl cellulose as supporting medium not only permitted the electrophoretic separation of greater amounts of protein, but also a sharper division[9]. Immuno-electrophoresis[10] has become an indispensable tool to test the purity of protein components.

The undenatured protein fractions which thus have become available were promptly investigated for their antigenic and immune properties. Other protein fractions were found to have well-defined physiologic functions, such as the transport of iron, copper, hemoglobin, cortisol and others yet to be isolated. Additional methods have been devised to improve and complete these investigations. Ultracentrifugation and the determination of the diffusion constant reveal the molecular weight of a newly defined protein fraction. Chromatography establishes its constituents (amino acids, carbohydrates and lipids). Terminal N-group analysis by means of specific enzymes finally reveals the exact structure of protein molecules and the sequence of the amino acids within the peptide chains of the molecule.

The seemingly impractical curiosity of men like Heuss, Hardy, Konig and Tiselius has contributed much to our ability to recognize and characterize disease. In addition, electrophoresis is but a link in the chain of developments which has led to a more detailed and exact knowledge of physiologic and pathologic mechanisms, and further developments which at this time are but subjects to expectation and speculation.

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A PEDIATRICIAN LOOKS AT CHILD PSYCHIATRY

When a quarter of a century ago I first became interested in child psychiatry, I was a stranger in a foreign land. Psychiatry existed in a tower of Babel. No two of its practitioners spoke the same language. Its literature was vastly intriguing but equally confusing, its interpretation of human behavior ranged from fantastic to the incredible. Like the girl in the song, I found myself bewitched, but sometimes bothered, and often bewildered.

The hurdles on the road to understanding were many. First we had to reconcile the static mechanistic approach of clinical pediatrics with the dynamic flexibility of psychiatry. Instead of treating symptoms, we had to learn to know the total child in relation to his total environment. Instead of taking histories in the traditional way, I had to learn to interview—and understand whole families.

Gradually, I came to know the practical differences between clinical pediatrics and child psychiatry. I knew well that in the former, one must use the elimination method of differential diagnosis; consider all the possibilities and rule out the less likely disease entities in order to arrive at a final diagnosis. I learned that whereas, in clinical medicine, diagnosis is a separate step between examination and treatment, in psychiatry, it becomes a compendium, a knowledge of the problem, of the factors which have produced it and of the patient who presents it. In treating a child with a contagious disease, you discharge him when his fever breaks and his symptoms disappear, but if he is a vicitim of chronic anxiety, his treatment may last for weeks or months, and you tell him so. If he is old enough, he can tell you where and how much it hurts, if his disease is somatic. If it's psychosomatic, he may not have the slightest notion of the causes of his behavior, or he may be inarticulate about them. Often his parents may be as helpless as he, to aid in defining what is happening to him.

Many of the syndromes which we used to think were clearly somatic we now know to have psychological components. Experience has taught us that "psychosomatic abdomens" are real, that they can cause as much suffering as a diseased appendix. Emotional tension may trigger bronchial asthma; obesity is often the result of anxieties that lead to compulsive eating rather than the result of glandular or constitutional factors.

Of all the psychiatric skills, I think the hardest to learn is to listen more and talk less. I spent a good many years laying down the law, scolding and moralizing. I found that I must have an approach that would make me tolerant of and permissive with the irritating foibles of both parents and children. To remain unruffled, patient and willing to listen through all manner of ramblings and irrelevancies is often a stiff test of one's iatrogenic capacities.

Perhaps more demanding is the ability to set limits, to decide how much of a psychiatrist a pediatrician can be. Obviously the more we learn about the special skills of the child psychologists, the psychiatrists and their associates the more competent we shall become in recognizing the bizarre and serious behavior phenomena of schizophrenia, sex abberations, and other adolescent psychological disturbances.

Preventive Child Psychiatry

The pediatrician should be able to help in an early attack on mental and emotional maladjustments in childhood. Eating and sleeping disorders, delay in bladder and bowel control, sibling rivalry and oppositional behavior are only a few of the common psycho-emotional problems the pediatrician meets day after day. Preventive measures should start as soon as the baby is born.

If mothers have the opportunity to share their problems with you they may be relieved of much future anxiety. Going over the "little things" that seem to bother them at this time, may free them of superstitions and fears.

One must never give the mother the impression that her questions are stupid. Any question she brings up is important to her. It is an implication of the way she feels, and her feelings should always be given consideration.

I have learned that the early relationship which is established not only with the mother but with the whole family, is more important than the kind of food that is prescribed. I no longer argue with the mother or her obstetrician if I see that she has already decided at her Canasta sessions not to nurse the baby.

If the pediatrician fails to include the mother in his specialty he will overlook a common cause of trouble in the baby, namely chronic fatigue in the mother. Seldom is this syndrome due to an organic disease. Nor is it necessarily due to psychogenic factors. No psychoanalysis or deep probing is necessary to spot a tired mother. Usually she is a worried, tense, overly conscientious person who tries to do too much. If she is a working mother, then after a full day's work outside of the home, another job awaits her at home. Neither vitamins, tranquilizers nor dexedrine, but less strain and stress, are the answer to the tired mother's prayer(4).

Colic

Colic may be the pediatrician's nemesis. It has spoiled more days and nights in the life of the doctor than any other condition he is called upon to treat during the baby's first three months. In the 50 years I have been challenged by this pest symptom, I have run the gamut of enlarging nipple holes, changing formulae, using "57-varieties" of anti-colic drugs, bubbling, rocking, walking the floor and using pacifiers. If progress has been made in combating colic, it is in giving greater priority to the psychosomatic approach and less to the physiologic. There is no doubt that a non-allergic diet will give relief to some babies, paregoric and sedation may help others. But of all the methods in present use, the psychiatric approach towards the whole family has served me the best. In other words the human environment should be treated rather than the colic.

This of course requires time and sympathetic understanding. If the mother is unable to give a coherent and consistent history I go into the home and see for myself how the mother and baby behave at feeding time. On the assumption that emotional factors are largely responsible for colic, one does not have to seek such fancy explanations as the "rejecting mother" or "rivalry with the husband over the infant." A simpler and more realistic explanation is often that, if the feeding relationship does not go well, the mother will naturally become frustrated and upset. This makes her tense and inconsistent in handling the baby during feeding. This in turn renders the baby tense and uncomfortable. At this stage one must differentiate between resentment and rejection, for a resenting mother is not necessarily a rejecting one. Spitz has shown that infants respond consistently well to parental handling.(3) If the infant is played with, talked to and fondled, it is comfortable and relaxed. If the mother is tense and anxious during its feeding the behavior is reactive. The contrast between the relative absence of colic in institutionalized babies and the high incidence of colic among private patients, justifies hospitalizing these babies if previous methods have failed.

Feeding Behavior

Feeding is the yardstick of total behavior in infants. Anorexia has come to mean a feeding behavior problem rather than an allergic disorder or an inability to tolerate the formula. Typical complaints of the mother are, "We are all going crazy trying to make the baby eat. He just won't eat anything. I don't see how he can grow up. He vomits everytime I give him the bottle." Although the mother is concerned chiefly about the symptom, anorexia, sooner or later other behavior disorders such as insomnia or oppositional behavior become manifest. It is during feeding that the principle "like stimuli, like response" is revealed. A mother who is tense, pushes the food down, scolds and threatens her infant will get similar behavior in return. What is required here is not a change in formula or a tranquilizer, but psychiatric advice directed to the mother's emotional conflict. There is no need to refer such a problem to a child psychiatrist if the pediatrician is interested in and devotes himself to the problem.

Sleep Behavior

Whereas feeding problems were more common than sleeping problems 25 years ago, today the order is reversed. With the present vogue of self-demand and permissive methods of child rearing, it is clear why there are so many sleep disturbances early in life. Many mothers respond to every whimper with the bottle, or pick up their babies on the slightest provocation. They allow their two and three year olds to stay up too late at night. One colleague of mine used to pick up his year old son out of a sound sleep to show his guests what a genius the baby was. Rocking the baby, walking the floor are the order of the day.

Many factors are responsible for disordered sleep. An earache or a respiratory infection will keep an infant awake in the night and when the "cold" is gone the habit may continue. There are many non-medical causes also which may be overlooked if careful histories are not taken. When my son was one year old he began to awaken regularly about 5 a.m. and so did I. Not until I had to make a 5 o'clock house call did I find the cause. The milk man had been stopping in front of our house noisily clanging his horse's anchor. Upon request, he stopped farther down the block, and we had no more sleeping problem. In another instance moving a baby away from the phone that was in constant use in the evening eliminated insomnia. Child psychiatrists are unnecessary in matters of this kind(9).

Hospitalization

In the past decade the medical profession has become more aware of the psychological harm that may come to children as a result of hospitalization. Yet today there is much more unnecessary hospitalization than ever before. Numerous case reports attest that many psychosomatic disorders such as eneuresis, nightmares, habit spasms, sleep disturbances and phobias originate or are aggravated after a stay in the hospital. David Levy, in a review of 124 children who had tonsilectomies, found emotional sequellae in about 50% of children under 3 years of age and in 10% over that age. Fears resulted in 72%, night terrors in 28%, dependency reactions in 6%.(2)

A child who is to be admitted to a hospital should be told the truth. It is morally wrong, and may cause lasting anxiety, to tell a child that he is going to the hospital only for an examination and then to send him to surgery. The nurse and intern should show warm interest in the child when he is admitted and patiently answer all questions concerning this new and frightening experience. Parents should be allowed to come to the room with the child and not be made to feel unwanted. They are too often rushed out of the room before the child is made comfortable and reassured.

The modern private children's wards are replete with such modern gadgets as radio, TV, and toys but they lack humanity. When private hospitals generally engage psychiatric social workers to assume human responsibilities, there will be fewer traumatic experiences for sick children.

In the face of the rising rate of delinquency and the increasing number of preventable unhappy maladjusted deviants, medical men whether pediatricians, general practitioners or internists, cannot afford to sit by and leave the mental and emotional health of children to the few child psychiatrists, clinical psychologists and psychiatric social workers.

Too few of us dealing with children in our respective specialties are willing to make the effort in time and training to meet the challenge of child psychiatry. Too many of us pass the buck to the child psychiatrist by ignoring or making light of a mother's complaints with the casual remark, "Don't worry about it, Johnny will outgrow his bed wetting—he has nothing the matter with him, it's just psychological." Every time we ignore Johnny like that, we are likely to push Johnny down the road of adult maladjustment.

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POST-GRADUATE EDUCATION IN THE VOLUNTARY NON-PROFIT HOSPITAL

Alice: "In our country you'd generally get to somewhere else if you ran very fast."

The Red Queen: "Here it takes all the running you can do to keep in the same place."

C. L. Dodgson

Constant improvement in patient care is the prime and continuing objective of any good hospital. How does a teaching program for physicians aid in achieving this goal?

The natural focal point of post-graduate education is the local hospital, visited daily by its staff. A continuously conducted program of clinical case conferences forms the framework of staff education. It includes meetings for surgical tissue review, x-ray conferences, and regular mortality studies. Discussion of difficult or unusual cases intended for interns and residents benefits the attending staff both immediately and through subsequent contact with the "house" staff. The new ideas and concepts held by recent graduates from medical schools, residency programs and research laboratories are melded with the experience and judgement of the seasoned practicing physician. Since the majority of medical therapeutics and many refinements and innovations of diagnosis are of recent origin these infusions are the life-line of good medical practice.

The feasability of using private patients for teaching-rounds is attested to by the fact that patients not only permit it but, in general, they appreciate the extra interest shown to their problems.

A hospital can achieve its prime goal of improving patient care more effectively with a good house-staff. Any hospital expecting to retain a house-staff must provide an adequate educational program and a preponderant majority of the attending staff must participate in and support the program.

The benefits of more intensive evaluation and consideration of the patient, the continuous care available in emergent situations developing in the hospital as well as in the emergency room justify the increased cost of an adequate house-staff. The intern and resident staff in the private hospital with an active educational program gain broad experience in evaluating a wide variety of patient illnesses such as they will encounter in their own practice. They will develop the ability to select the proper diagnostic procedures and to make prompt and accurate diagnoses. Experience in treating common medical problems under the supervision of mature physicians, where the personal circumstances of the individual patient is emphasized, is invaluable.

The teaching program in the voluntary hospital is and will be increasingly important in the field of post-graduate medical education for better patient care. Educational opportunities for attending and house-staff exist in every private hospital. Utilizing them, benefits the patient directly by immediate improvement in medical care and by the long range elevation of standards throughout the hospital.

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Your opinions are sought as "Letters to the Editor." Any signed letter will be considered if it is beneficial to the medical practice as a whole. The opinions expressed in this section need not represent the opinions or policies of MINNESOTA MEDICINE or the Minnesota State Medical Association.

Dr. Walter H. Judd, 1961 A.M.A. Distinguished Service Award recipient and Mrs. Judd were honored guests at the President's reception at the Waldorf-Astoria Hotel in New York City.

AMA MEETING IN FOCAS

The Billings Gold Medal award for excellence in correlation of facts and presentation went to the exhibit on "Cerebral Angiography in Medical Practice," shown at the A.M.A. meeting presented by Drs. Colin B. Holman, Hillier L. Baker, Jr., Alfred Uihlein, Ross H. Miller and Arthur H. Bulbulian, all of whom are from the Mayo Clinic & Foundation.
Dr. Baker (R) discusses the exhibit with visiting Dr. J. R. Hodgson, (L), also of Rochester.

Cerebral Angiography in Medical Practice
Basic Principles and Application
Indications

American Medical Association President, Dr. Leonard W. Larson of Bismarck, North Dakota, extends a salutary handshake to Dr. Walter H. Judd, 1961 recipient of the Distinguished Service Award. A.M.A. Delegates selected Dr. Judd for his noted achievements as a medical missionary, humanitarian, and devoted to world peace.

A.M.A. MEETING EVENTS AND ACTIONS REPORTED

At the opening session of the House of Delegates Meeting on Monday, June 26, Dr. E. Vincent Askey of Los Angeles, retiring A.M.A. president, challenged physicians and medical organizations to re-examine their own efforts to strengthen and improve medicine, and he warned against defeatism and failure to accept personal responsibility for answering criticisms. Dr. Leonard W. Larson, Bismarck, North Dakota, then president-elect, called on the profession to strengthen methods of self-discipline in both the state and county societies, adding that physicians must be concerned with improper or incompetent practice and unethical actions of all kinds. The 1961 Goldberger Award in Clinical Nutrition was presented to Dr. Frederick J. Stare, chairman of the Department of Nutrition at Harvard Medical School.

Osteopathy, medical discipline, communications, surgical assistants, drug legislation, general practice residencies, relations with allied health professions and services, and poliomyelitis vaccine were among the major subjects covered by 115 resolutions and 28 reports acted upon by the House during the course of the meeting.

Osteopathy

In considering a report of the Judicial Council and three resolutions on the subject of osteopathy, the House of Delegates agreed with the intent of the report and resolution, but instead adopted the following statement of AMA policy:

"1. There can never be an ethical relationship between a doctor of medicine and a cultist, that is, one who does not practice a system of healing founded on a scientific basis.

"2. There can never be a majority party and a minority party in any science. There cannot be two distinct sciences of medicine or two different, yet equally valid systems of medical practice.

"3. Recognition should be given to the transition presently occurring in osteopathy, which is evidence of an attempt by a significant number of those practicing osteopathic medicine to give their patients scientific medical care. This transition shoud be encouraged so that the evolutionary process can be expedited.

"4. It is appropriate for the American Medical Association to **reappraise its application of policy** regarding relationships with doctors of osteopathy, in view of the transition of osteopathy into osteopathic medicine, in view of the fact that the colleges of osteopathy have modeled their curricula after medical schools, in view of the almost complete lack of osteopathic literature and the reliance of osteopaths on and use of medical literature, and in view of the fact that many doctors of osteopathy are no longer practicing osteopathy.

"5. Policy should now be applied individually at state level according to the facts as they exist. Heretofore, this policy has been applied collectively at national level. The test now should be: Does the individual doctor of osteopathy practice osteopathy, or does he in fact practice a method of healing founded on a scientific basis? If he practices osteopathy, he practices a cult system of healing and all voluntary professional associations with him are unethical. If he bases his practice on the same scientific principles as those adhered to by members of the American Medical Association, voluntary professional relationships with him should not be deemed unethical."

Medical Discipline

In a major move designed to strengthen the profession's disciplinary mechanisms, the House approved the conclusions and recommendations of the Medical Disciplinary Committee, with only three word changes. The House discharged the committee with thanks and commendation and directed that its functions be assumed as a continuing activity of the Judicial Council.

One recommendation suggests that "The bylaws of the American Medical Association be changed to confer original jurisdiction on the Association to suspend or revoke the AMA membership of a physician guilty of a violation of the Principles of Medical Ethics or the ethical policy of the American Medical Association regardless of whether action has been taken against him at local level."

Another "encourages and urges that each state association report annually to the American Medical Association all major disciplinary actions taken within its jurisdiction during the preceding calendar year."

The report urged state and county medical societies to utilize grievance committees as "grand juries" to initiate action against an offender so as to obviate the necessity of making an individual member of a medical society complain against a fellow member.

The House suggested that each medical school develop and present a required course in ethics and socio-economic principles, and that each state board of medical examiners include questions on ethics and proper socio-economic practices in all examinations for license.

The report concluded with a recommendation that "American medicine at the national, state and local level maintains an active, aggressive and continuing interest in medical disciplinary matters so that, by a demonstration of good faith, medicine will be permitted to continue to discipline its own members when necessary."

Communications

Acting upon four resolutions related to the Association's public relations program, the House adopted a substitute resolution directing the Speaker of the House of Delegates to name seven elected members of the House as a special committee "to study and continually advise the Board of Trustees on the board planning and coordination of all phases of communications of the American Medical Association, so that the public and the members of the medical profession are properly and adequately advised on the policies and concern of the medical profession with respect to all phases and aspects of medical care for all people."

The House agreed with a reference committee opinion that "we have a very adequate Division within the A.M.A. capable of implementing any program of communications." The approved committee report also said that "the Communications Division of the A.M.A. needs the active support and cooperation of the House and of all members of the Association."

Surgical Assistants

In considering a Board report and two resolutions on the subject of surgical assistant's fees, the House approved the following five basic principles developed by the Judicial Council and the Council on Medical Service:

"1. Each member of the A.M.A. is expected to observe the Principles of Medical Ethics in every aspect of his professional practice.

"2. Each doctor engaged in the care of the patient is entitled to compensation commensurate with the value of the services he has personally rendered.

"3. No doctor should bill or be paid for a service when he does not perform; mere referral does not constitute a professional service for which a professional charge should be made or for which a fee may be ethically paid or received.

"4. It is ethically permissible for a surgeon to employ other physicians to assist him in the performance of a surgical procedure and to pay a reasonable amount for such assistance.

"This principle applies whether or not an assisting physician is the referring doctor and whether he is on a per-case or full-time basis. The controlling factor is the status of the assisting physician. If the practice is a subterfuge to split fees or to divide an insurance benefit, or if the physician is not actually employed, and used as a bona fide assistant, then the practice is contrary to ethical principles.

"5. Under all other circumstances where services are rendered by more than one physician, each physician should submit his own bill to the patient and be compensated separately."

Efficacy of Drugs

The House strongly endorsed a Board report which pointed out the problems that would result from amending the Food, Drug and Cosmetic Act to authorize the Food and Drug Administration to determine the efficacy, as well as the safety of a prescription drug prior to the approval of a new drug application. The A.M.A. will oppose such legislation before the Kefauver

Committee, the report pointed out, on the basis that "a decision with respect to the effectiveness of drugs is dependent upon extended research, experimentation and usage." The House agreed that vesting such authority in the Food and Drug Administration would operate to limit research, the marketing of drugs and the exercise of discretion by the medical profession.

"The marketing of a relatively useless drug is infinitely less serious than would be the arbitrary exclusion from the market of a drug that might have been life saving for many persons," the House declared.

General Practice Residencies

Eight resolutions were introduced on the subject of creating new two-year, residency training programs in general practice. The House agreed that there appears to be a need for such programs for those individuals who desire more experience in obstetrics and surgery than may be available in the currently existing Family Practice Program. It approved a substitute resolution directing the Council on Medical Education and Hospitals to consider for approval other two-year programs in general practice which incorporate experience in obstetrics and surgery. The Council will review these programs on the basis of their individual merits and conduct a long-range evaluation of the new programs as well as the previously established Family Practice Programs.

Relations With Other Health Professions and Services

The House considered a Board report and twelve resolutions dealing with various aspects of medicine's relationships with allied health professions and services, including optometry. The Board report recommended the creation of a new A.M.A. Council to handle all the problems involved.

The House, however, accepted reference committee suggestion for establishment of a new Commission to Coordinate the Relationships of Medicine with Allied Health Professions and Services. The Commission will be composed of seven members appointed by the Speaker of the House. Subcommittees, composed of from three to five members selected by the Commission from lists of names submitted by the scientific sections, will consider problems in specific areas. The Commission will correlate and catalogue the reports of the subcommittees and will act as liaison agent between the subcommittees and those A.M.A. Councils where there may be overlapping interests.

Polio Vaccine

The House approved a report by the Council on Drugs on the present status of poliomyelitis vaccination in the United States and urged that it be made available to all physicians through the most effective communications media. The report clearly outlines procedures recommended for implementation of mass vaccination with the new oral vaccine when it becomes available. The House complimented the Council on its "clear and succinct statement on the initiation of the new campaign which will be needed to promote the new vaccine." The House agreed that the report provides the practicing physician with a reliable series of answers to the many questions which will arise during the change-over from Salk vaccine to oral vaccine.

The report emphasizes, however, that "physicians should encourage, support and extend the use of Salk vaccine on the widest possible scale at least until the oral polio-virus vaccines currently under development and clinical trial become available."

Miscellaneous Actions

In dealing with resolutions and reports on a wide variety of other subjects, the House also:

Approved the **"Guides to Physician Relationships with Medical Care Plans,"** submitted by the Council on Medical Service, with these two changes: deletion of item 5 under "Responsibilities of the Medical Society," which said "To recognize that properly qualified physicians employed by, or otherwise serving, medical care plans should not be denied professional rights and privileges because of their service to such plans," and addition of a new item 1 under "Responsibilities of the Medical Care Plan," which reads: "To provide the beneficiary of the plan with free choice of qualified physicians";

Reaffirmed its support of the **Kerr-Mills** program for the needy and near-needy aged and its opposition to any legislation of the **King-Anderson** type, declaring that the medical profession "will not be a willing party to implementing any system which we believe to be detrimental to the public welfare;"

Approved a markedly expanded **drug information program** submitted by the Board of Trustees and the Council on Drugs;

Adopted the final report of the **Special Study Committee** of the Council on Medical Education and Hospitals and recommended that copies be sent to all medical school deans in the United States;

Decided to hold the **1963 Clinical Meeting** in Portland, Oregon, instead of Las Vegas, Nevada, as recommended by the Board;

Approved a plan by the new A.M.A. Department of International Health to cooperate in the recruitment of volunteer physicians for emergency medical service in **foreign mission fields;**

Agreed to an increase of $20 in the annual A.M.A. **membership dues** to be implemented over a period of two years: $10 on January 1, 1962, and $10 additional on January 1, 1963;

Discontinued the Association's **General Practitioner of the Year** award;

Opposed legislative and administrative mandates which would compel physicians to prescribe drugs, or require pharmaceuticals to be sold, by **generic names** only;

Reaffirmed the Association's opposition to compulsory inclusion of physicians under the **Social Security** system;

Urged immediate legislation that will provide strong economic motivation for the construction and maintenance of **fallout shelters:**

Disapproved two resolutions which would have discontinued the scientific activities at the **Clinical Meeting;**

Urged **immunization campaigns** against both tetanus and influenza, and asked state and county medical societies to give full support to the **First National Congress on Medical Quackery** to be jointly sponsored next October 6-7 in Washington, D. C., by the A.M.A. and the Food and Drug Administration.

Election of Officers

In addition to Dr. Fister, the new president-elect, the following officers were named at the Thursday session:

Dr. Eustace A. Allen of Atlanta, Georgia, vice president; Dr. Norman A. Welch of Boston, re-elected speaker of the House, and Dr. Milford O. Rouse of Dallas, Texas, re-elected vice speaker.

Elected to the Board of Trustees were Dr. Wesley W. Hall of Reno, Nev., to succeed Dr. Fister; Dr. Homer L. Pearson, Jr., of Miami, Fla., to replace Dr. Julian P. Price of Florence, S. C., and Dr. Charles L. Hudson of Cleveland, Ohio, to fill out the term of the late Dr. Cleon A. Nafe of Indianapolis. The Board named the following officers: chairman, Dr. Hugh Hussey of Washington, D. C.; vice chairman, Dr. Percy Hopkins of Chicago, and Secretary, Dr. James Z. Appel of Lancaster, Pa.

Named to the Judicial Council were Dr. Robertson Ward of San Francisco, to succeed himself, and Dr. Elmer G. Shelley of North East, Pa., to replace Dr. Pearson.

Re-elected to the Council on Constitution and Bylaws was Dr. Walter E. Vest of Huntington, W. Va.

New members of the Council on Medical Service are Dr. Charles Ashworth of Providence, R. I., succeeding Dr. Carlton Wertz of Buffalo, N. Y., and Dr. Burtis E. Montgomery of Harrisburg, Ill., to succeed Dr. Charles Hudson of Cleveland.

For the Council on Medical Education and Hospitals, Dr. Dwight L. Wilbur of San Francisco was elected to succeed Dr. John W. Cline of the same city, and Dr. Kenneth C. Sawyer of Denver, Colorado, was named to succeed Dr. Guy A. Caldwell of New Orleans.

Minnesotan Named Distinguished Service Award Winner

Dr. Walter H. Judd, a former medical missionary and Republican Congressman from Minnesota's Fifth District was named recipient of the American Medical Association's 1961 Distinguished Service Award. This is one of the highest honors a physician can receive.

Minnesotans who have previously received this award include: Dr. Donald C. Balfour, director emeritus of the Mayo Foundation in Rochester, and Dr. Frank Krusen, director of the Kenny Rehabilitation Institute, and President of the Sister Elizabeth Kenny Foundation, Minneapolis. Dr. Krusen was professor of physical medical and rehabilitation, Mayo Foundation, Rochester, Minnesota, at the time when he received the award.

The A.M.A. House of Delegates picked Dr. Judd for the award at the opening session of the Association's annual mid-year meeting in New York for his noted achievements as a medical missionary, humanitarian and statesman devoted to world peace.

A medical missionary in China for 10 years, Dr. Judd long has been a leading advocate of medicine as a major means of furthering world

As a member of Congress since 1942, Dr. Judd has been a tireless campaigner for medical and other international organizations working for world peace.

He worked arduously for establishment of an international organization for peace for four years before the United Nations was founded in 1945. He was author of World Health Organization and the International Childrens' Fund Legislation in Congress. He played a decisive role in the development of legislation for technical, including health, aid to underdeveloped areas under both U. S. and U. N. programs.

Dr. Judd carried the benefits of American medicine to the Chinese people as a medical missionary for the Congregational Foreign Mission Board during the period 1925-38. He served at Nanking, Shaowu Fukien and Frenchow Shanshi.

After six years in South China, he was stricken with malaria and forced to return to this country.

Later, he superintended a 125-bed hospital for four years in North China during the period of the Japanese invasion and the revolt of Chinese Communists.

Dr. Judd delivered an address "The Medical Missionary as a Representative of American Medicine" at a meeting in New York of officers of state medical societies.

He has been a member of Congress representing Minnesota's Fifth District since 1942.

Dr. Judd was awarded the University of Nebraska George Washington Honor Medal in 1945 and a Freedoms Foundation Award last year. He holds honorary doctorate degrees from 15 colleges and universities. He was graduated from the University of Nebraska Medical School in 1923·

Inaugural Ceremony

A.M.A. President, Dr. Leonard W. Larson, in his inaugural address Tuesday night, June 27, said that the really good doctor, guided by the professional spirit, will always remember that medicine exists for just one purpose — to serve humanity. When the essence of that spirit is diluted or destroyed, either in an individual physician or in a nation, he added, medicine ceases to be a profession in the highest sense of the word.

AMERICAN MEDICAL ASSOCIATION OFFICIALS TESTIFY IN DRUG HEARINGS

The medical profession has once again been drawn into the line of Congressional Fire. The most recent issue deals with the controversial senate hearings on the drug industry.

Heading the Senate antitrust subcommittee is Senator Estes Kefauver (D), Tennessee. Senator Kefauver is the sponsor of a bill S-1552 which seeks to impose new federal legislation on drugmakers.

In 1960 this committee also conducted extensive investigations of drug industry practices. Portions of the proposed Kefauver legislation of particular interest to physicians include provisions to require labeling by official (generic) as well as trade name, and to require the Food and Drug Administration to pass on the efficacy as well as the safety of drugs. The measure also would cut the effective life of drug patents from 17 years to three years, and authorize the HEW secretary to determine the official name of drugs.

In the opening round of hearings which resumed on July 5, A.M.A. representatives who testified on Senator Estes Kefauver's proposed drug bill, S-1552, hit hardest at the provision under which the Food and Drug Administration would determine drug efficacy . . . During the hearings conducted before Sen. Kefauver's Antitrust Subcommittee on July 5-6, Dr. Hugh Hussey, Chairman of the Board of Trustees, explained AMA's position on drug efficacy as follows: "we are dedicated to the objective of obtaining effective drugs for the use of physicians in their practice and, thus, for the ultimate benefit of the public health. The problem is how to attain this objective. It is our position, based on the history of medical science and the extent of experience of the medical profession, that the only possible method for ultimately evaluating the effectiveness of a drug is the widespread usage of that drug by the medical profession over a considerable period of time."

Dr. Hussey emphasized that the AMA's Council on Drugs offers its opinion on the effectiveness of a drug only after enough time had passed for sufficient experience to be gained by physicians as to the efficacy of that drug . . . "On the other hand," he continued, S-1552 would have the federal government make such an evaluation before such widespread experience in usage had occurred." . . . Dr. Hussey asserted that it is possible that turning over the determination of drug efficacy to the FDA could deprive the profession and the public of a life-saving drug.

Other Witnesses Testify

Appearing with Dr. Hussey were Dr. Ernest B. Howard, AMA Assistant Executive Vice President; C. Joseph Stetler, Director, Legal and Socio-Economic Division; and Joseph Jerome, Ph.D., Assistant Secretary of the Council on Drugs . . . Briefly, S-1552 would: (a) amend antitrust and patent legislation effecting drug manufacturers; (b) extend the authority of the Food and Drug Administration in determining the effectiveness of a drug at the time a new drug application is filled; (c) authorize the Secretary of HEW to determine the non-proprietary name of all drugs; and (d) require the Secretary of HEW to distribute to physicians and hospitals all information required in the packaging of drugs . . . Limiting their testimony to provision of the bill which would directly affect the practice of medicine and the public health, the AMA witnesses made the following points:

—The Association believes that the system of adopting non-proprietary or generic names for drugs has been reasonably effective in the past, and that the new joint Nomenclature Committee (AMA-U. S. Pharmacopoeia) will make it even more effective in the future.

—The AMA's expanded new drug information program would make it unnecessary for the HEW Secretary to distribute drug information. Under the Association's new program, an A.M.A. handbook on drugs will be published annually. The handbook will be kept current by the publication and distribution of quarterly supplements and weekly drug reports published in JAMA.

Hearings to Continue

Senator Kefauver will continue to hear other witnesses on S-1552 . . . Meanwhile, the Administration has also drafted a drug bill (not yet introduced) which will broaden the federal government's authority to regulate manufacturers of drugs, cosmetics, and medical devices.

President Signs Social Security Bill

President Kennedy, on June 30, signed H.R. 6027, Social Security Amendments of 1961, and S-1922, Housing Amendments of 1961 . . . Now known as PL 87-64, the social security legislation increases minimum social security benefits to $40 a month; raises benefits to widows of an enrolled worker; and permits a man the option of retiring at age 62 with reduced benefits. H.R. 6027 will (1) increase minimum social security benefits to $40 a month from the present $33; (2) raise the benefits to a widow, aged 62 or over, of an insured worker to 82.5% of his retirement benefits from the present 75%; (3) permit a man who wants to retire between ages 62 and 65 to start drawing benefits at a rate ranging upward from 80% of what he would receive if he waited until age 65; (4) ease eligibility requirements by allowing workers to receive payments if they have been employed in a job by social security for one quarter of a year out of every four quarters since 1950, instead of one quarter out of every three.

Kerr-Mills

New Hampshire has passed enabling legislation under the Kerr-Mills program . . . California also recently passed Kerr-Mills enabling legislation . . . Kerr-Mills MAA programs are now in operation in Kentucky, New York, Washington, Maryland, Massachusetts, Oklahoma, West Virginia, Michigan, Arkansas, North Dakota, Tennessee, South Carolina, Utah, Idaho, Puerto Rico, and Virgin Islands . . . States where legislation has been enacted but where the programs are not yet in operation are: Indiana, Georgia, Iowa, New Mexico, Oregon, Illinois, and the aforementioned New Hampshire and California.

The Art of Medicine

PR

Carl H. Woyke
Editor

. . . "Get The Public Relations Religion"

ATTEND YOUR MEDICAL PUBLIC RELATIONS INSTITUTE

From a medical standpoint Public Relations means rendering good medical service twenty-four hours each day, 365 days a year. Public Relations also means doing the right thing-then letting the public know that you are doing it.

The County Medical Public Relations Manual comments in recent years doctors have been shaken from their saintly pedestals of yore. With shock MDs have found themselves branded unjustifiably as modern-day "sinners" by the press and the public. Physicians have been chided for a "negative, do-nothing" approach to proposals for health improvements, and rebuked for a cold, impersonal attitude toward patients. They are being blamed for the high cost of medical care and reproached for the actions of a few unethical medical men.

Basically, there's little wrong with the way doctors practice medicine. MDs still adhere to the medical "bible" - the code of medical ethics. Then how can doctors correct such misconceptions and win friends for medicine? The medical profession must first put its house in order, eliminating the cause for public criticism. Then the public must be told that doctors are doing a good job. This amounts to "preaching what you practice!" And that's where public relations comes into the picture.

A lot of people figure public relations is just a device to cover up shortcomings. Others think of public relations as publicity. Both conceptions are wrong. Public relations is a way of thinking translated into action. A better term might be "public service."

The manual points out that the medical man who says: "I've been practicing medicine for 35 years - and I've been getting along all right without public relations" overlooks an important fact. He's had public relations from the day he started preaching. Whether he has good or bad public relations depends upon the doctor himself.

Some confuse "public relations" with high-powered publicity campaign to whitewash imperfections. Others mistake it for an insincere attempt to adopt a widespread "bedside manner" to woo patients and public. The public relations philosophy fails unless it is based upon sincerity - an honest desire to do the best job possible in the best way possible.

The public relations outlook calls for a reemphasis of the ethical aspects of certain day-to-day aspects of practice to more adequately meet modern day needs.

Over the years men have learned that it pays to do the right thing. Once you accept the will to do good (call it enlightened self-interest, if you like), then public relations becomes mainly a problem in communications. Contacts between individuals and groups are an intergral part of our daily lives. In this complex world these contacts and inter-relationships become highly complicated. Public relations is the key to mutual understanding - a mutual understanding replaces discord and strife with harmony and good will.

Good public relations depends upon the performance of the entire medical team, not just a few "stars." Every doctor must practice individual public relations - but these PR efforts must be integrated and supplemented by more formalized campaigns by his medical societies.

The ultimate aim of public relations programs is to win and sustain as many friends for medicine as possible. The public must learn to identify the humanitarian and public interest attitudes and actions which comprise good medical PR not just with one doctor, but with the entire medical profession.

. . . Here is your starting point

A public relations institute for Minnesota doctors has been planned for Saturday, October 14, at the Hotel Leamington in Minneapolis.

This is an excellent opportunity for county medical society officers and individual physicians to become informed on the importance and necessity of good public relations.

The public health education committee is planning a program which will include a variety of sessions about medical public relations including public relations and medical ethics, an explanation of the state association's Public relations program, as well as an explanation of public relation helps available to individual doctors and county medical societies.

The Public Relations institute will be open to county medical society officers as well as other Minnesota State Medical Association members interested in medical public relation. County medical societies are urged to appoint a public relations chairman to attend the institute.

* * *

Here's a list of PR pamphlets and booklets designed to further good doctor-patient relations, which are again available in quantity from the Minnesota State Medical Association office. Most of them are recommended for distribution to patients.

—"To All My Patients," 12-page pamphlet designed to give patients a better understanding of various aspects of medical care.

—"Winning Ways With Patients," 24-page manual on the human and business side of medical practice, designed for the doctor's receptionist, nurse and secretary.

—"Do You Like To Make Decisions?," give-away leaflet discussing the importance of a good doctor-patient relationship.

—"The Fifth Freedom," give-away leaflet stressing the value of the close relationship existing between doctor and patient when the patient can choose his own family doctor.

—"Why Wait?," give-away leaflet urging everyone to have a personal family doctor and not to wait until illness strikes before acquiring one.

—"What Everyone Should Know About Doctors," 16-page booklet outlining the extent of a doctor's education, routine examinations of patients, winding up with a plea for everyone to find a family doctor. Limited quantities available but designed for patients.

—"To All My Patients" (plaque), for sale at one dollar, postage paid. Urges patients to feel free to ask their doctor any questions about his service or fees. For display on wall or desk.

—"Rx—A Prescription for Growth," AMA's new membership brochure calling for physicians to take an active interest in their national organization and those issues facing the profession today.

Medical Examiners

MINNEAPOLIS MAN SENTENCED FOR VIOLATING BASIC SCIENCE LAW BY FORGING PHYSICIAN'S SIGNATURE IN ORDER TO OBTAIN DRUGS.

Re: State of Minnesota -vs- Richard L. Joachim

On June 28th, 1961 Richard L. Joachim, 23, 1406 Madison St. N. E., Minneapolis, was sentenced, pursuant to his plea of guilty, by the Hon. Irving R. Brand, Judge of the District Court of Hennepin County, to a term of one year in the Minneapolis Workhouse, the execution of the sentence being stayed for one year, however, and the defendant being placed on probation by the Court for the same period of time. The defendant had been charged in a complaint issued by the Hennepin County Attorney's office on May 16th, 1961 with violating the basic science law by attaching the title of doctor to his name, thereby indicating or designed to indicate that he was engaged in the practice of healing. The charge had been lodged against Joachim after investigation by the authorities revealed that he had signed the name of a Minneapolis physician to one of his prescription blanks, after making the prescription out for six ounces of Tussar cough syrup and then presenting the prescription for compounding at the Loop Pharmacy, 932 Marquette Ave. Minneapolis.

Because the defendant had been in the same drug store with similar prescriptions in the past he aroused the suspicions of the personnel in the pharmacy which resulted in the authorities being called into the case. Joachim, who was arrested when he returned to the drug store for the cough syrup, admitted in a signed statement that he had obtained Tussar cough syrup by means of forged prescriptions at two other drug stores, one in Minneapolis and one in St. Paul. He also admitted that he had been taking this medication for more than one year. Just prior to being sentenced by Judge Brand, Joachim told the Court that he had been using Tussar cough syrup because he had been emotionally upset. The defendant, who has no medical training and holds no license to practice any form of healing in the State of Minnesota, has not been previously convicted of a crime.

Minnesota State Board of Medical Examiners
J. P. Medelman, M. D.,
Secretary

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Pheneen Solution N.R.I. contains No Rust Inhibitors, and is recommended for disinfection of nonmetallic objects. Both types are supplied in quart and gallon bottles, and in bulk drums.

[1] *Jorres, S. M.: Unpublished test report from Pratt Diagnostic Clinic, New England Medical Center, Boston, Mass. (July, 1958)* NW-660

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Meetings and Announcements

AUGUST

American Academy of Physical Medicine and Rehabilitation, Sheraton-Cleveland Hotel, Cleveland, August 28. Dorothea C. Augustin, 30 North Michigan Avenue, Chicago 2, Executive Secretary.

SEPTEMBER

American Association for Automotive Medicine, University of Minnesota, Minneapolis, September 14-16. Dr. Joseph Janes, Mayo Clinic, Rochester, Minnesota, Chairman of the Convention Committee.

American Association of Medical Clinics, Barbizon Plaza Hotel, New York, September 27-29. Dr. Joseph B. Davis, Davis Clinic, 131 N. Washington St., Marion, Indiana, Secretary-Treasurer.

American Association for the Surgery of Trauma, Drake Hotel, Chicago, September 28-30. Dr. William T. Fitts, Jr., 3400 Spruce St., Philadelphia 4, Secretary.

American Society of Clinical Pathologists, Olympic Hotel, Seattle, September 30 - October 8. Miss Eleanor F. Larson, 445 N. Lake Shore Drive, Chicago, Manager.

College of American Pathologists, Seattle, September 30 - October 3. For information write: Dr. A. H. Dearing, Prudential Plaza, Suite 2115, Chicago 1.

Michigan State Medical Society, Grand Rapids, September 24-29. Dr. D. Bruce Wiley, 606 Townsend Street, Lansing, Michigan, Secretary.

The American College of Obstetricians and Gynecologists, September 13-14, Kansas City, Kansas; September 28-30, Atlanta, Georgia. For further information write: Mrs. Ruth Sutton, Information Counsel, 79 West Monroe Street, Chicago 3.

American College of Chest Physicians, Warwick Hotel, Philadelphia, September 25-29. Write: Mr. Murray Kornfield, 112 E. Chestnut Street, Chicago, Executive Director.

American Association of Medical Clinics, Barbizon Plaza Hotel, New York, September 27-29. Dr. Joseph B. Davis, Davis Clinic, 131 N. Washington St., Marion, Ind., Secretary-Treasurer.

Kentucky State Medical Association, Brown Hotel, Louisville, September 19-21. Mr. J. P. Sanford, 1169 Eastern Parkway, Louisville 17, Ky., Executive-Secretary.

Michigan State Medical Society, Grand Rapids, Pantlind Hotel, September 24-29. Dr. D. Bruce Wiley, 606 Townsend St., Lansing 15, Mich., Secretary-Treasurer.

American Society of Clinic Pathologists, Olympic Hotel, Seattle, September 30 - October 8. Miss Eleanor F. Larson, 445 N. Lake Shore Drive, Chicago, Manager.

The Minnesota Academy of General Practice announces its Eleventh Annual Fall Refresher to be held at Hotel Radison, Minneapolis, September 27-28.

American Fracture Association, Shoreham Hotel, Washington, D. C. Dr. H. W. Wellmering, 610 Griesheim Bldg., Bloomington, Ill., Executive Secretary, Sept. 16 to 23.

OCTOBER

American Academy of Ophthalmology and Otolaryngology, Palmer House, Chicago, October 8-13. Dr. William L. Benedict, 15 Second Street, S. W., Rochester, Minnesota, Executive Secretary.

American Academy of Pediatrics, Palmer House, Chicago, October 2-5. Dr. E. H. Christopherson, 1801 Hinman Avenue, Evanston, Illinois, Executive Director.

Central Association of Obstetricians and Gynecologists, Statler-Hilton Hotel, Cleveland, October 5-7. Dr. Herman L. Gardner, Suite 201, 6436 Fannin St., Houston, Texas, Secretary-Treasurer.

College of American Pathologists, Middle-East Section, Haddon Hall Hotel, Atlantic City, N. J., October 27-28. Dr. Harry H. Stumpf, The Mountainside Hospital, Montclair, N. J., Program Director.

Eastern Psychiatric Research Association, New York City, October 27-28. Dr. David J. Impastato, 40 Fifth Avenue, New York, Secretary-Treasurer.

American Academy of Pediatrics, Palmer House, Chicago, October 2-5. Dr. E. H. Christopherson, 1801 Hinman Ave., Evanston, Ill., Executive Director.

American College of Chest Physicians, Sheraton Towers, Chicago, October 23-27. Write: Mr. Murray Kornfield, 112 E. Chestnut St., Chicago, Executive Director.

American Cancer Society, Biltmore Hotel, New York City, New York, October 23-24. Write: Professional Education Section, American Cancer Society, 521 West 57 Street, New York 19, New York.

The American College of Obstetricians and Gynecologists, October 10-12, Pittsburgh, Pennsylvania; October 26-27. Chicago, Illinois. For further information write: Mrs. Ruth Sutton, Information Counsel, 79 West Monroe Street, Chicago 3.

Thirteenth Postgraduate Assembly In Endocrinology and Metabolism, Bethesda, Maryland, Oct. 2-6. Cosponsored by the Endocrine Society and the National Institute of Health. Write: Dr. Roy Hertz, Building 10, Bethesda 14, Maryland.

NOVEMBER

American Medical Association Clinical Meeting, Denver, November 27-30. Dr. F. J. L. Blasingame, 535 N. Dearborn, Chicago 10, Executive Vice President.

American Psychiatric Association, Hotel Schroeder, Milwaukee, Wisconsin, November 16-18. Miss Joan D. McGucken, 756 North, Milwaukee 2, Wisconsin, Administrative Assistant.

Interstate Postgraduate Medical Association, November 13-16, Cleveland, Ohio. Write: E. R. Schmidt, M. D., Secretary, Interstate Postgraduate Medical Association, Box 1109, Madison 1, Wisconsin.

The American College of Obstetricians and Gynecologists, November 16-18, Louisville, Kentucky. For further information write: Mrs. Ruth Sutton, Information Counsel, 79 West Monroe Street, Chicago 3.

American College of Chest Physicians, Brown Palace Hotel, Denver, Colorado, July 24-28. Write: Mr. Murray Kornfield, 112 E. Chestnut St., Chicago, Executive Director.

American Medical Association, Clinical Meeting, Denver, November 27-30. Dr. F. J. L. Blasingame, 535 N. Dearborn St., Chicago 10, Executive Vice-President.

Medical Continuation Courses to be presented at the Center for Continuation Study, University of Minnesota, Minneapolis, Minnesota.

September 18-21, Pediatrics for Specialists, October 2-4, Obstetrics for Specialists, October 19-21, Dermatology for Specialists,, November 6-10, Radiology for Radiologists (Urologic Radiology) November 15-17, Opthalmology (Refraction for General Physicians November 16-18, Orthopedics for Orthopedic Surgeons (Hand Surgery).

MINNESOTA Post-Graduate — September 18-21, 1961—

Dr. Lawson Wilkins, Professor and Endocrinologist (Johns Hopkins), will deliver the Annual McQuarrie Lecture, September 20.

Dr. Ralph Platou, Professor (Tulane), will be guest lecturer. He will present difficult diagnostic problems of poisoning. Dr. Edward Press, Chairman of the Academy Committee in Poisoning, will participate in the symposium on poisoning on September 20.

Thyroid physiology and pathology will be discussed by Dr. Robert Blizzard, Chief of Pediatric Endocrinology (John Hopkins) and Dr. Alvin B. Hayles (Mayo Clinic) and Dr. T. C. Evans (Iowa University) on September 18.

Chronic Recurrent Infection will be the center of the lectures on September 19. Dr. Harry Ginsburg, Professor of Microbiology (University of Pennsylvania), Dr. Robert Good and Dr. Lewis Wannamaker will be participants in this portion.

Advances in Pediatrics will be the title for September 21.

Round Tables and open discussions will be part of the program each day. For reservations and more detailed information write: The Center for Post-Graduate Education, University of Minnesota, Minneapolis, Minnesota.

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When you prescribe Trancopal, you can prevent "oversplinting." Trancopal will relax the spasm, ease the pain and get the muscle working again. Relaxation generally begins within half an hour, and the effects of one tablet last from four to six hours.

In addition to relaxing the muscle, Trancopal will mildly tranquilize the patient, reducing the restlessness and irritability that so often accompany discomfort. With Trancopal, the patient can soon start purposeful exercise and physical therapy.

Trancopal has been found very effective in the treatment of patients with low back pain (lumbago), neck pain (torticollis), bursitis, fibrositis, myositis, ankle sprain, tennis elbow, osteoarthritis, rheumatoid arthritis, disc syndrome and postoperative muscle spasm. Trancopal is available in 200 mg. Caplets® (green colored, scored) and in 100 mg. Caplets (peach colored, scored), bottles of 100.

Dosage: Adults, 1 Caplet (200 mg.) three or four times daily; children (5 to 12 years), from 50 to 100 mg. three or four times daily.

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Woman's Auxiliary

Neighbors and auxiliary members attending a recent "Operation Coffeecup" party at the home of Mrs. Walter P. Gardner, St. Paul, heard Ronald Reagan speak out on "Socialized Medicine." Coffee and conversation with friends were used to inform Mrs. Gardner's guests about the crucial issue of socialized medicine which faces America today. Information on "Operation Coffeecup" can be obtained from your State Office.

THELMA H. MERRITT, President

Goal for 1961-62: "Let the helping hands of the doctor's wife reflect and enrich the doctor's dedicated service to mankind."

AN URGENT MESSAGE

By Thelma H. Merritt, President

All Auxiliary programs and projects are important, but some . . . determined by current situations and directives from the AMA . . . merit priority rating.

Today, we of the Auxiliary should ardently support the Kerr-Mills Medical Care for the Aged Law passed by Congress last year. If put into effect in all states, this law would enable the individual states to guarantee to every aged American who needs help, the health care he requires. The AMA supported this legislation vigorously and doctors throughout the nation are now working to put this new program into effect.

The proponents of the medical care program, based on a compulsory social security tax, want the Kerr-Mills law to fail. There is a nationwide campaign to discredit it, and therefore, organized medicine needs the wholehearted assistance of Auxiliary members in combating a compulsory health care program for the aged.

One of the Auxiliary's most productive contributions this year could be writing Congressmen, urging them to vote against the "social security care" King-Anderson bill.

Other areas of priority service embrace the expansion of Homemaker Service Programs for Senior Citizens, promotion of voluntary health insurance, better nursing home care and facilities, health education, particularly in the fields of nutrition and safety; and wherever we can, promotion of a more realistic attitude toward older people and their retirement age and economic care needs.

The AMA supports every activity and law designed to help those persons *who need help*. The opposition stands for federal medical care for *all* aged persons, *regardless of their need*.

We all can help. Let us set our minds to help.

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In Memoriam

ARTHUR B. WILLIAMS

Doctor Arthur B. Williams, 85, died June 24, after a stroke at the Wilder infirmary, St. Paul.

Doctor Williams practiced medicine in St. Paul 32 years before he retired in 1957. He graduated from the Hahnemann Medical College in Philadelphia. He practiced medicine in Wilmont from 1902 to 1917, and served in World War I as a captain in the army medical corps.

He belonged to the American Medical Association, the Minnesota State Medical Association, the Ramsey County Medical Society, and the American Association of Railway Surgeons and practiced on the Midway Hospital staff.

Survivors include three daughters, a son, Doctor John A. Williams, six grandchildren and seven great-grandchildren.

J. PAUL PERSON

Doctor J. Paul Person, 49, died in his sleep at his home in Albert Lea June 19.

Doctor Person received his medical education at Hastings college, and received a degree in medicine from the University of Nebraska.

He was a member of the American Medical Association, the Academy of General Practice, a past president of the Freeborn County Medical Association, the Minnesota State Medical Association, and a past president of the Naeve hospital staff.

Survivors include his wife, one son, one daughter, his mother and a brother.

EDGAR V. ALLEN

Doctor Edgar V. Allen, 61, former president of the American Heart Association, and one of the nation's foremost heart researchers, died June 14 in St. Mary's hospital in Rochester after a lengthy illness.

Doctor Allen, a senior consultant in internal medicine at the Mayo Clinic, had been on the clinic staff since 1930. He was one of three winners of the heart association's 1960 Albert Lasker Award for distinguished achievement in the field of cardiovascular research.

He was a member of the American Medical Association, the Minnesota State Medical Association, and the Zumbro Valley Medical Society.

Survivors include his wife, his father, a daughter, two sons, three sisters and two brothers.

EZRA C. ESHELBY

Doctor Ezra C. Eshelby, 97, physician and surgeon, died April 9.

Doctor Eshelby is a graduate of the University of Michigan and the University of Toronto, Canada.

Doctor Eshelby was granted Associate membership in the Minnesota State Medical Association in 1931. He was also a member of the American Medical Association, and the Ramsey County Medical Society.

GEORGE R. MELZER

Doctor George R. Melzer, 81, physician and surgeon, died April 30.

Doctor Melzer obtained his medical education at the Northwestern University. He began practicing in 1908.

He belonged to the Mower County Medical Society, and was granted Life membership in the Minnesota State Medical Association in 1952, he was also a Fifty Club member of the Minnesota State Medical Association.

VIRGIL E. QUANSTROM

Doctor Virgil E. Quanstrom, 53, Brainerd, died June 11th.

A graduate of Washington High School, he received his doctor of medicine degree from the University of Minnesota and served his internship at Detroit's Receiving Hospital.

Doctor Quanstrom was a member of the St. Joseph's Hospital staff, the American College of Surgeons, the Upper Mississippi Valley Medical Society, the American Medical Association, the Minnesota State Medical Association, a Mason and Shriner, and a member of the Rotary.

Survivors include his mother, and one daughter.

WALTER G. SAHR

Doctor Walter G. Sahr, 67, Hutchinson physician, died July 3.

Doctor Sahr began practicing in 1923 and has practiced in Hutchinson for 40 years.

He belonged to the American Medical Association, the Minnesota State Medical Association, and the McLeod County Medical Society.

Survivors include his wife, three sisters, and a brother, Doctor Ben Sahr.

JOHN TOWNSEND ROSE

Doctor John T. Rose, 74, Lakefield physician for forty-eight years, died while on a May fishing trip.

Doctor Rose was a graduate of the University of Iowa Medical School in 1909. He practiced in Traer, Iowa for several years before moving to Lakefield.

Doctor Rose was a member of the First Methodist Church, the Masonic Lodge, Swen Rasmussen Legion Post No. 4, the VFW, and the American, Minnesota, Southwestern and Sioux Valley Medical Associations.

He is survived by his wife, and a brother and three sisters.

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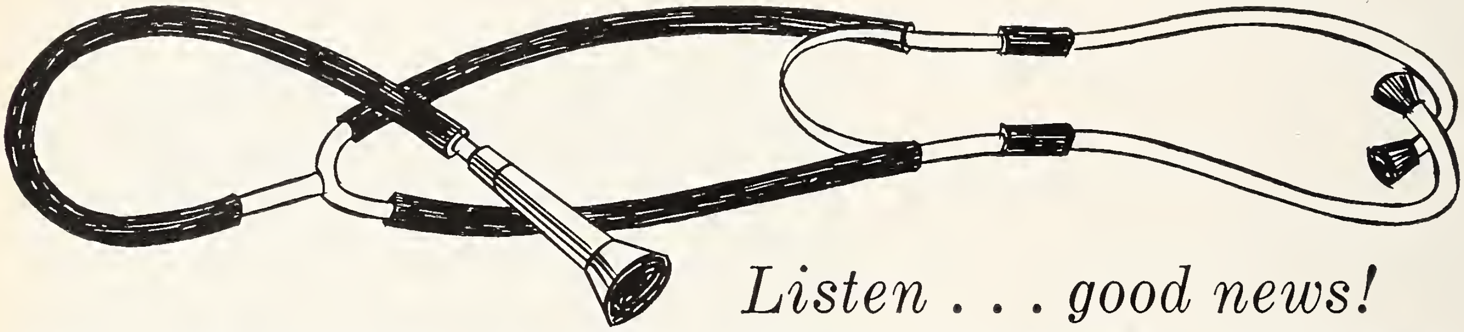

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Physician's Diary

Dr. P. J. Hiniker of LeSueur recently accepted a position on the medical staff of the St. Peter State Hospital.

* * *

Every medical exhibit shown recently by the Mayo Clinic at the annual meeting of AMA in New York City received an award. **Doctors Colin B. Holman, Hillier L. Baker, Alfred Uihlein, Ross H. Miller** and **Arthur H. Bulbulian** received the first award. **Doctors William G. Sauer, William H. Dearing, Charles G. Moertel, Malcolm B. Dockerty, C. Allen Good** and **Arthur H. Bulbulian** received the second award. **Doctors Robert B. Wilson, James S. Hunter, Jr., Richard E. Symmonds, Malcolm B. Dockerty,** and **Alexander Albert** also received a certificate of merit. Honorable mention was given to an exhibit shown by **Doctors Owings W. Kincaid, George D. Davis, Harold C. Swan, William H. Weidman** and **Arthur H. Bulbulian.**

* * *

Dr. William R. Weybrauch, a partner in the Olmsted Medical Group, left Rochester recently to begin the practice of general surgery in the Lincoln, Nebraska Clinic.

* * *

Dr. Richard T. Henry of Springfield, Ohio became associated with **Dr. Clifford Stiles** of Foley.

* * *

Dr. Harold Blackwell, clinical psychologist in the Victoria Hospital, London, Ontario, has joined the Northern Pines Mental Health Clinic in Little Falls as the clinical psychologist.

* * *

Dr. Charles W. Mayo has been selected to attend an exclusive Golden Plate dinner for outstanding Americans to be held September 9th on the Monterey Peninsula. The guest list is limited to 50 persons chosen by secret vote of the Academy of Achievement.

Dr. Roger F. Hartwich was elected president of the medical staff of the Winona General Hospital, succeeding **Dr. S. O. Hughes. Dr. Philip Heise** was re-elected chief of obstetrics.

* * *

Dr. Randall G. Sprague, head of a section of medicine in the Mayo Clinic and professor of medicine in the Mayo Foundation, was recently elected president of the Mayo Foundation Chapter of the Society of the Sigma Xi.

* * *

Dr. James F. Clark of Worthington will intern in the department of pathology at the St. Louis University School of Medicine.

* * *

Dr. Richard W. Anderson left the East Range Clinic in Aurora to enter a residency in pathology at the Veterans Administration Hospital in Minneapolis. **Dr. Leo K. McGill,** a member of the East Range Clinic, was recently certified by the American Board of Obstetrics and Gynecology.

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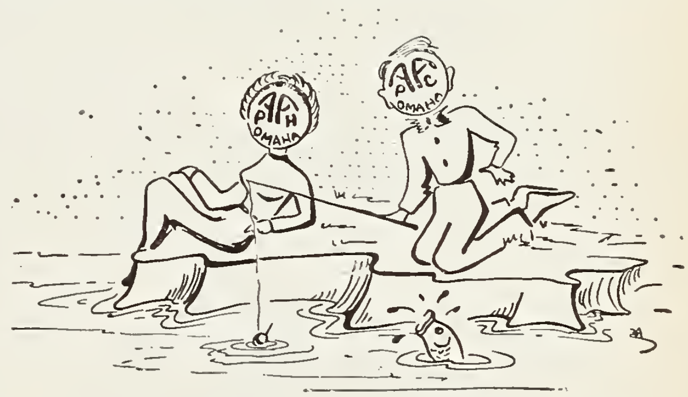

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Dr. Robert B. Pierce began practice in North Mankato taking over the practice of **Dr. John Wohlrabe. Dr. Wohlrabe** will study three years in psychiatry and neurology at Washington University, St. Louis, Missouri.

* * *

Dr. Norman W. Hoover, orthopetic surgeon on the staff of the Mayo Clinic has joined the staff aboard the SS Hope, the American floating medical teaching staff, during the months of July and August.

* * *

Dr. D. R. Nelimark of the Lenont-Peterson Clinic in Virginia was recently elected an Associate of the American College of Physicians. **Dr. Nelimark** recently was appointed Virginia City Health Officer and Medical Advisor to the Virginia Selective Service Board.

* * *

Dr. J. Grafton Love, head of the Section of Neurosurgery in the Mayo Clinic, was elected president of the Society of Neurological Surgery during its 52nd annual meeting in Boston recently.

* * *

Dr. John C. Henry of Lewiston was recently named "Intern of the Year" at Miller Hospital in St. Paul. Dr. Henry will locate in Owatonna where he will practice medicine with his brother, **Dr. Kenneth Henry.**

Dr. Chris. A. Pascuzzi will enter into the practice of clinical pathology in the South Bend Medical Group, South Bend, Indiana. **Dr. Pascuzzi** was formerly a member of the Section of Clinical Pathology of the Mayo Clinic.

* * *

A new medical group known as the Minnesota Valley Medical Association consisting of **Dr. Jo E. Anderson,** formerly of Elk River; **Dr. D. A. Bergeron** of LeSueur; **Dr. Vane P. George, Jr.** of Minneapolis; and **Dr. Nels Sonnesyn** has been formed in LeSueur.

* * *

Dr. John M. Waugh, head of a section of surgery in the Mayo Clinic, was inducted as president of the Association for Colon Surgery at its annual meeeting recently in New York City.

* * *

Dr. John Lester who has been in the practice of medicine in Truman opened up his own office in Mapleton recently.

* * *

Dr. Charles W. Mayo was recently awarded the District of Minnesota's Sertoma "Service to Mankind" award.

* * *

Dr. and Mrs. L. M. Evans of Sauk Rapids recently celebrated their 25th Wedding Anniversary.

* * *

Dr. Fred C. Westerman of Montgomery was recently honored by the community for his fifty years of untiring devoted medical service to that community.

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Dr. John W. Kirkin, head of a section of surgery in the Mayo Clinic, was awarded the honorary degree of doctor of medicine by the University of Munich, during the course of his recent visit to Europe.

* * *

Dr. Hugh O. Williams was recently honored in Lake Crystal for his 50 years of practice in the medical field.

* * *

The Friedenwald Metal, the top award of the American Gastroenterological Association, was recently awarded **Dr. J. L. Bollman,** director of research at the Rochester State Hospital.

* * *

Dr. E. R. Addy of Gilbert was named Chief of the Medical Staff of the Eveleth-Fitzgerald Community Hospital.

* * *

Dr. E. A. Eberlin of Glenwood celebrates 60 years in the practice of medicines this year.

* * *

Mayo Clinic recently announced the appointment of seven new consultants to the Mayo staff . . . **Doctors E. J. Walter Bowie, Harley C. Carlson, Frederick L. Darley, John C. Dower, Peter J. Dyck, Ernest C. Herrmann,** and **Dr. James D. Jones.** Six assistant-to-staff appointments are: **Doctors Thomas H. Casey, P. Kent Cullen Jr., John C. Damron, David V. Homme, Douglas B. McGill,** and **Dr. Robert J. Schultz.**

Dr. Robert T. Patrick, a member of the Section of Anesthesiology of the Mayo Clinic, will leave the Clinic to enter into the private practice of medicine in Casper, Wyoming.

* * *

Dr. Carl A. Schwartz, medical director and psychiatrist of the Mower County Mental Health Center in Austin, was principal speaker at the annual board of directors meeting of the Northeast Iowa Mental Health Center in Decorah, Iowa recently.

* * *

Dr. Robert D. Knapp Jr. of Kalamazoo, Michigan has been appointed to the staff of the Mayo Clinic as a member of the Section of Publications.

* * *

Dr. Marguerite Schwyzer of St. Paul spoke on "Education on Communism" at the Northfield Rotary Club luncheon during the month of July.

* * *

Dr. Russell L. Drake, retiring head of the Mayo Clinic Section of Medical Illustration, turned over his duties to his assistant, **Dr. Vincent P. Destro.**

* * *

A Pulmonary Function Testing Laboratory has been established at The Charles T. Miller Hospital in St. Paul. **Dr. Everett H. Karon** has been named director of the unit. **Dr. George Roth** has been appointed Medical Director of the Department of Inhalation Therapy at the Hospital.

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(1) Carter, S.: *M. Clin. North America* 37:315, 1953.
(2) Maltby, G. L.: *J. Maine M. A.* 48:257, 1957.
(3) Buchthal, F.; Svensmark, O., & Schiller, P. J.: *Arch. Neurol.* 2:624, 1960.

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Contents fo

SCIENTIFIC ARTICLES

ORIGINAL CONTRIBUTIONS

Hyperlipemia — Types and Differential Diagnosis
Burton S. Sklarin, M. D., Winnifred Seegers, M. D.
Kurt Hirschhorn, M. D.
New York, New York 359

Sarcoidosis as a cause of Portal Hypertension and Esophageal Varices
Seymour Handler, M. D., and *Norman Blank, M. D.*
Minneapolis, Minnesota 363

Peripheral Arterial Insufficiency
L. J. Hoyer, M. D., Windom, Minnesota 366

Coronary Occlusion following Test
David A. Berman, M. D., Minneapolis, Minnesota 370

Chest Pain associated with Hypertension in the Lesser Circulation
Koson Kuroda, M. D., P. Kezdi, M. D. and
W. H. Wehrmacher, M. D.
Chicago, Illinois 374

The Minneapolis Academy of Medicine
Stanley R. Maxeiner, M. D., Minneapolis, Minnesota 380

The Use of IBM Tabulating Methods in the Analysis of Medical Data
Frank A. Rogers, M. D., F.A.C.S.
Whittier, California 382

ABSTRACTS AND BRIEFS 387

BOOK REVIEWS 389

Minnesota
Medicine
Represents

Duluth Surgical Society
Minneapolis Academy of Medicine
Minneapolis Obstet. and Gynecol. Soc.
Minneapolis Surgical Society
Minnesota Academy of Medicine

Minn. Acad. of Occup. Med. and Surg.
Minn. Obst. and Gynecological Society
Minnesota Academy of Ophthalmology and Oto-Laryngology
Minn. Society of Clinical Pathology

Medicine

Volume 44
Number 9

September, 1961

MISCELLANEOUS ARTICLES

EDITORIALS

Nomenclature and Diagnosis in Coronary Diseases
The Role of Effort
Arthur M. Master, M. D., New York, New York........394

A Revaluation of the Term Physician Examination
Henry L. Ulrich, M. D., Minneapolis........397

WE ARE PROUD TO ANNOUNCE........391

PRESIDENT'S LETTER........392

A LETTER TO THE EDITOR........398

THE ART OF MEDICINE........399

BLUE SHIELD........A-45

MEETINGS AND ANNOUNCEMENTS........A-47

IN MEMORIAM........A-55

PHYSICIAN'S DIARY........A-57

CLASSIFIED ADVERTISING........A-61

Minn. Society of Internal Medicine
Minn. Society of Neurol. & Pysch.
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Hyperlipemia

Types and Differential Diagnosis

BURTON S. SKLARIN, M. D. *
WINNIFRED SEEGERS, M. D. **
KURT HIRSCHHORN, M. D. ***
New York, New York

The patient with "creamy plasma" is of prime interest to the modern physician because blood fats and their possible relationship to atherosclerosis continue to occupy the medical limelight. This article focuses attention on tests for hyperlipemia and their practical diagnostic application.

THE writings, speeches and informal remarks of the late Dr. Charles F. Wilkinson, Jr., contained many references to hyperlipemia, its deleterious effects on coronary disease, its diagnosis and its treatment. Many of his conclusions were impressions based on long personal experience with this subject. This paper represents a part of our efforts to substantiate and quantitate Dr. Wilkinson's teachings.

Types of Hyperlipemia

When we speak of hyperlipemia, we mean an elevation of serum triglyceride. This elevation may be primary, as in familial hyperlipemia, or secondary to other disease entities, such as diabetes mellitus, the nephrotic syndrome, hypothyroidism or hepatic disease. The basic metabolic defect in familial hyperlipemia is a delayed removal of ingested fat from the blood stream after normal absorption.

Familial hyperlipemia is inherited as an incompletely dominant trait.[1] Incomplete dominance exists when the single dose of the gene for an abnormal trait (the heterozygous condition) produces an abnormal effect that is less than that produced by the double dose (the homozygous condition).[2] The homozygous form of this disease, with hepatosplenomegaly, abdominal crises and xanthomas, is relatively rare.[3] The heterozygous abnormal is far more common than is generally believed and is frequently overlooked.[4]

The heterozygote frequently presents with fasting hyperlipemia and may even have xanthomas, especially of the eruptive type, but the only manifestation of his abnormality may be a delay in clearing ingested fat. In addition, these persons, particularly the males, frequently have coronary artery disease at a relatively young age. In view

---

This paper was presented at the St. Louis Meeting of the American Heart Association, on October 21, 1960.
From the Department of Medicine of the New York University Medical Center.
Supported in part by grants from the American Heart Association, Incorporated, and the National Heart Institute, National Institutes of Health, United States Public Health Service (Grant H-2202).

* Teaching Assistant in Medicine, New York University School of Medicine.

** Assistant Professor of Medicine, New York University Medical Center. U.S.P.H.S. Trainee in Human Genetics.

*** Assistant Professor of Medicine, New York University Medical Center, Established Investigator of the American Heart Association..

of the increasing reports of hyperlipemia associated with coronary artery disease, detection of the patient who has hyperlipemia is of prime importance. In a study by our group of a young Swedish population, the incidence of heterozygotes for hyperlipemia was found to be 2 to 3 percent.[4] We are currently engaged in a similar study on American students.

Detection of Hyperlipemia

Screening Test —Examination of the patient's serum 12 hours after the ingestion of a meal containing large amounts of fat is a good screening method. A normal adult will have cleared the ingested fat from his blood by this time. It is important for the patient to have had a normal intake of fat for several days prior to the test.

Fat-Tolerance Test — For a more extensive evaluation, we give the patient an abnormal load of fat and measure its disappearance from the blood.

To perform a fat-tolerance test, we use the following procedure. After a specimen of blood is drawn with the patient fasting, the patient is given a standard meal containing 90 gm. of fat and is not allowed to eat anything else until the test is finished. Blood specimens are drawn at 3-hour intervals for 12 hours and again at 24 hours. The serum is analyzed for triglycerides, or the optical density is measured. An extremely good correlation is present between these two measurements in nonrefrigerated serum from fasting persons.

Our standard meal consists of the following: 2 eggs, 1 oz. butter, 8 oz. milk, 6 oz. heavy (40%) cream, 2 slices of bread, dry cereal, coffee or tea, sugar, salt. We use this meal to provide the 90 gm. of fat instead of using only concentrated fat or heavy cream. Pure fat may cause pronounced slowing of gastric contractility and delay in absorption, or diarrhea with decreased absorption. When the fat is given in the form of dairy products in association with other foods, the meal is well tolerated.

Figure 1 shows the normal changes in serum optical density following the standard meal. After a peak of lipemia at about 3 hours, the serum triglycerides return to the fasting level from 6 to 9 hours after the meal. With advancing age (more than 50 years), the return to the fasting level may be delayed until 9 to 12 hours after the meal. We consider it diagnostic of hyperlipemia when the patient, after normal absorption, does not clear his serum to the fasting level by 12 hours (Fig. 1). Hyperlipemi, persons frequently show a much higher peak of lipemia coupled with the delay in clearing.

Normally, the ingested fat is absorbed and enters the blood stream predominantly in the form of chylomicrons. Lipoprotein lipase catalyzes the breakdown of chylomicron triglyceride to free fatty acids.(5) These are then bound to albumin(6) and may be transported into the cells to be metabolized or may be resynthesized with glycerol to form the triglyceride fraction of the beta lipoprotein (Fig. 2). Lipoprotein lipase is activated in vivo by heparin.(7)

Heparin Test

If the patient is lipemic, we test his responsiveness to heparin by means of a heparin clearing test. The patient is given the standard 90-gm. fat meal and then receives an intravenous injection of 50 mg. of heparin at the expected time of peak lipemia. In a normal test, the usual peak of lipemia is seen at 3 hours (Fig. 3). Following the injection of heparin, the triglyceride level falls promptly. On the basis of this test, we refer to our hyperlipemic patients as "heparin sensitive" or "heparin resistant." We arbitrarily define heparin resistance as less than a 25 percent decrease in optical density within 30 minutes after the injection. Normal persons have a decrease of more than 75 percent, while heparin-sensitive hyperlipemics and some primary hypercholesterolemics have a decrease of between 25 and 75 percent. Our heparin-resistant patients have had a decrease of less than 5 percent.

Diagnostic Applications

We have studied several types of primary and secondary hyperlipemia by these methods. In untreated hypothyroidism, we see slow absorption and clearing. The peak of lipemia is reached as late as 9 hours after the fat meal. There is slow clearing, and the fasting level may not be reached until 24 hours after the meal. Heparin given several hours following the standard meal causes rapid clearing of the serum, with a decrease of more than 25 percent in 30 minutes. This would imply that an adequate amount of lipoprotein lipase is present but that there is a defect in the normal activation of this enzyme, possibly due to a diminished amount or diminished activity of endogenous heparin (Fig. 2, component 3). Upon

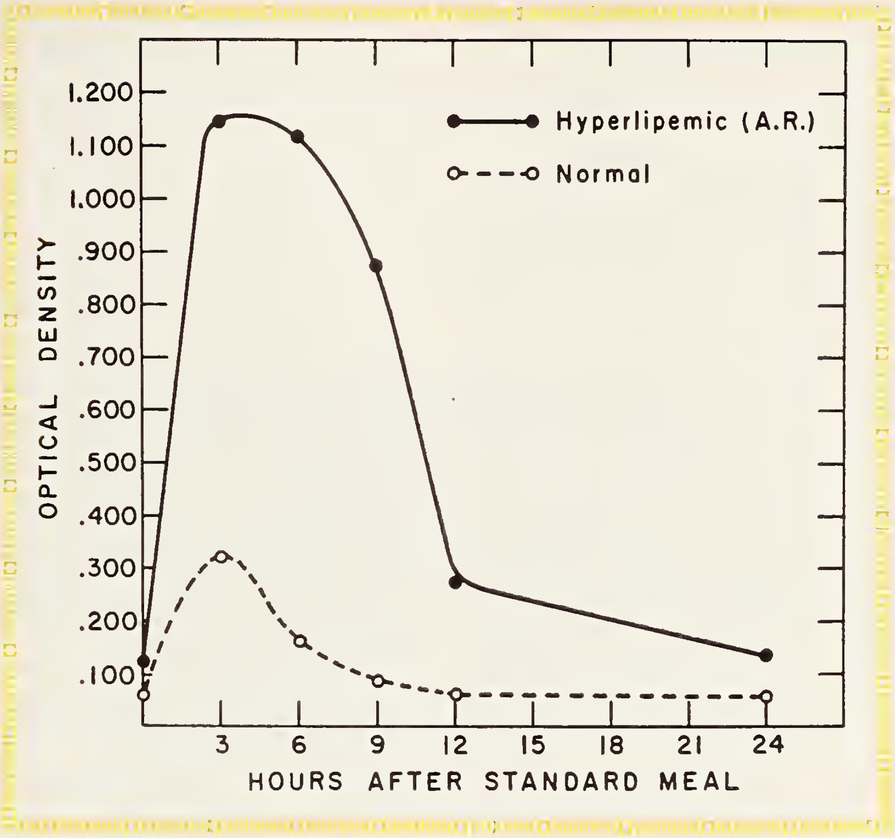

Fig. 1 Fat-tolerance tests in a normal person and a hyperlipemic patient.

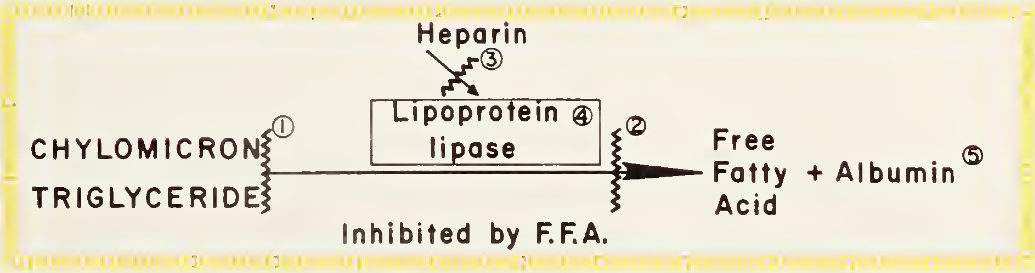
Heparin
③
CHYLOMICRON
TRIGLYCERIDE
①
Lipoprotein ④
lipase
②
Free
Fatty + Albumin ⑤
Acid
Inhibited by F.F.A.

Fig. 2 Simplified representation of method of chylomicron-triglyceride breakdown to free fatty acid, and several points where the reaction may be blocked. 1. Abnormal chylomicrons. 2. Inhibitor. 3. Decreased or abnormal heparin activity. 4. Deficient or abnormal lipoprotein lipase activity. 5. Deficiency of albumin.

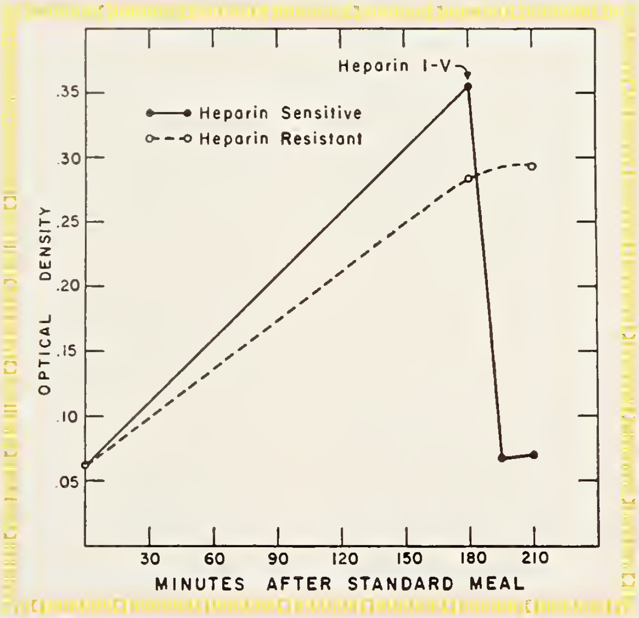

Fig. 3 A heparin clearing test in a normal heparin-sensitive person and a heparin-resistant hyperlipemic patient.

treatment with adequate doses of thyroidal hormone, the fat tolerance returns to normal.

The nephrotic syndrome may be accompanied by lipemia in the fasting state or a delay in clearing an ingested fat meal. Several patients, although fasting levels were normal, had both delayed clearing and relative heparin resistance. Nephrotics have a deficiency of serum albumin (Fig. 2, component 5), which is necessary for the transport of free fatty acids. When free fatty acids accumulate, they have been shown to inhibit the clearing reaction. (8)

If the patient's hyperlipemia is not secondary, we make the diagnosis of essential or familial hyperlipemia. This disease can be subdivided into several entities according to the defect in the clearing mechanism (Fig. 2). Patients have been described in whom abnormal chylomicrons are present(9) that appear to be resistant to the normal clearing mechanism (Fig. 2, component 1). Ingested fat is absorbed and cleared normally. Although their fasting serums have a high optical density, these patients are not hyperlipemic by our definition. There is no known association between this extremely rare entity and coronary-artery disease.

Hyperlipemic patients who have a delay in clearing and are heparin resistant probably have a deficiency or abnormality of lipoprotein lipase(10) (Fig. 2, component 4). A small number of our patients with primary hyperlipemia fall into this category.

Some investigators(11) believe that these patients have an inhibitor to lipoprotein lipase (Fig. 2, component 2). We could not demonstrate such an inhibitor in our patients when testing for it by the suggested method.(11) The large majority of our patients fall into the heparin-sensitive group. It is not known whether these patients have diminished or abnormal mast cells, diminished heparin production or an abnormal inactive heparin.

Treatment

Once we have localized the defect, we are still left with the problem of therapy. Human lipoprotein lipase is not available for replacement in those patients who lack adequate activity of this enzyme. In the heparin-sensitive patients, heparin therapy is expensive, inconvenient and occasionally dangerous. Effective dietary treatment must be based on an understanding of the mechanism of the disease. Although lipids may be reduced initially by a fat-free diet, such a diet eventually produces starvation lipemia by fat mobilization.(12) Substitution of unsaturated for saturated fats achieves nothing so far as the elevated triglycerides are concerned.(13)

Spaced fat feeding, as described by Wilkinson,(14) is a practical method and is effective for the following reasons. While a normal person can clear ingested fat from his blood in 6 to 9 hours, many hyperlipemic patients require 18 to 24 hours. If these hyperlipemic patients eat fatty foods at every meal, their serum lipids continue to increase, starting at a higher level each day. If, however, these patients limit their intake of fat to one meal a day and do not eat foods containing fat for breakfast or lunch, 24 hours is allowed for clearing the alimentary lipemia. Thus, each meal containing fat is eaten at a time when the serum lipids have returned to their fasting level. We have treated several patients in this manner with maintenance of normal lipid levels for prolonged periods.

If dietary therapy is not followed by the patient, or if it does not produce the desired results, we use nicotinic acid in large doses.(15) We have been able to reduce the levels of serum triglyceride and cholesterol to normal values in most hyperlipemics, as we reported elsewhere. (15)

Summary

Hyperlipemia may be primary or it may be secondary to other diseases. Familial hyperlipemia, a primary type, is manifested by delayed removal of ingested fat from the blood stream after normal absorption.

The differential diagnosis is aided by use of such procedures as a simple screening test, the fat-tolerance test and the heparin clearing test.

Spaced feeding of fats is a practical form of treatment of hyperlipemia. Nicotinic acid in large doses is effective. Use of heparin is expensive and occasionally dangerous in the management of this condition.

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SARCOIDOSIS as a cause of PORTAL HYPERTENSION and ESOPHAGEAL VARICES

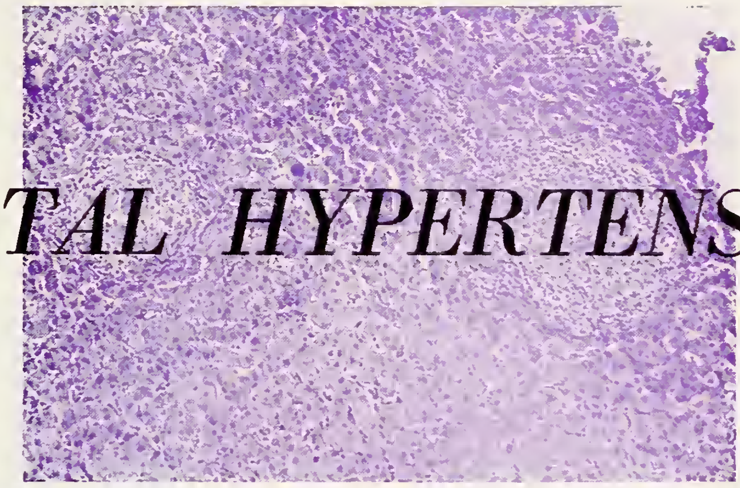

Fig. 3. Hematoxylin and eosin section of liver needle biopsy showing two typical noncaseous epithelioid granulomas. This section is representative of the number of granulomas in any low power field.

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NORMAN BLANK, M. D. *
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An interesting problem relating to portal hypertension has been presented by the authors. This patient had esophageal varices which resulted in severe gastrointestinal hemorrhage. At the time of surgery when a portocaval shunt was performed, portal hypertension was proved and the liver, although involved with sarcoidosis, did not demonstrate fibrosis commensurate with the hypertension. Perhaps this patient will have to be considered in the group of "forward type" of portal hypertension on the basis of increased flow through the intestinal vascular bed resulting in engorgement of the venous vascular tree. A most interesting case report!

HEPATIC involvement has been recognized in a significant number of cases of sarcoidosis with an incidence varying from 65 to 75 percent in different autopsy and clinical series.[1-3] The increasing use of the needle biopsy has further pointed out the common occurrence of sarcoid granulomata in the liver, with or without functional liver abnormality. In a few cases,[3-8] sarcoid lesions have been considered the cause of cirrhosis of the liver, usually with associated portal hypertension and varices. In both autopsy and surgical descriptions the liver has been described as typically hobnailed and cirrhotic.

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The fibrous healing of confluent granulomata with resultant fibrosis is thought to distort the hepatic architecture sufficiently to lead to cirrhosis and portal hypertension. One author[5] believes that the involvement of veins in the portal triad causes portal hypertension. To add to the limited experience of sarcoidosis as a cause of portal hypertension, the following case is presented in which associated cirrhosis is not demonstrated.

Case Report

The patient is a 41 year old white male laborer admitted to the Minneapolis Veterans Administration Hospital on March 11, 1958. The patient had increasing weakness, anorexia and weight loss for approximately 5 or six months prior to admission. In addition, in the two months prior to admission he had intermittent tarry stools. Two weeks prior to admission, the patient was too weak to work and the number of tarry stools increased. The patient also had vague anterior chest pains of a constant aching nature occasionally radiating into the shoulders. The chest pain was not anginal in nature and was not precipitated by exertion. The patient had experienced these pains since 1947 with increased severity in 1953 prompting hospitalization at another hospital with no definite diagnosis being made.

The patient's alcoholic history is equivocal. The patient admitted drinking up to 12 to 15 bottles of beer a day, but the patient's wife said that his intake had never been that high. Despite the beer intake, he had always been able to work and had usually been eating well during the period of beer consumption. The patient had not had any alcoholic beverages during the three months prior to admission. In addition to the weakness, the patient had had loss of libido and impotency for two months prior to admission.

Past medical history included malaria and dengue fever during his time in military service. The patient had had yellow skin from atabrine, but no definite history of previous jaundice.

Physical examination revealed a pale, weak, chronically ill appearing white male in no acute distress. The vital signs were normal. A grade II systolic murmur was present in the pulmonic valve area. The cardiac rhythm was regular and the heart was not enlarged. There were bilateral basilar pulmonary rales. The edge of the spleen was 3 cm. below the costal margin and the liver edge was down 2 cm. No other masses were palpable. Lymph nodes were not remarkable. Tarry stools were found in the rectum. The remainder of the physical examination was within normal limits.

Laboratory Examination: The hemoglobin was 3 grams percent on admission and multiple repeat determinations confirmed this very low figure. White blood cell count was 5900 per cu. mm. with 90% neutrophils, 8% lymphocytes, 1% eosinophils and 1% basophils. Erythrocyte sedimentation rate was 65 mm./hour (Westergren), hematocrit 9.5% and platelets 79,000 cu. mm. Reticulocyte count was 7.1%,MCV 95, MCH 31, MCC 32. Blood smear revealed slight to moderate poikilo - and anisocytosis and some hypochramasia. Bone marrow aspiration revealed normoblastic hyperplasia and absence of stainable iron. Urinalysis was normal. Blood chemistries were as follows: BUN 33 mgm. percent, serum albumin 2.2 grams percent, serum globulin 3.8 grams percent, serum cholesterol 100 and 140 mgm. percent on two determinations, alkaline phosphatase of 28 and 33 King-Armstrong units on two occasions. Liver function tests were as follows: Serum bilirubin and thymol turbidity - normal, BSP retention 22%, cephalin-cholesterol flocculation 3 plus in 48 hours. Axillary lymph node biopsy was interpreted as a normal lymph node. Electrocardiogram was normal. Gastroscopy revealed large rugal folds at the cardia with esophageal varices. Gastrointestinal series (fig. 1) showed esophageal varices and varices in the cardia of the stomach. Chest x-ray (fig. 2) at another hospital in November 1953 showed bilateral hilar and right paratracheal lymphadenopathy, and current films showed only a slight increase in this lymphadenopathy.

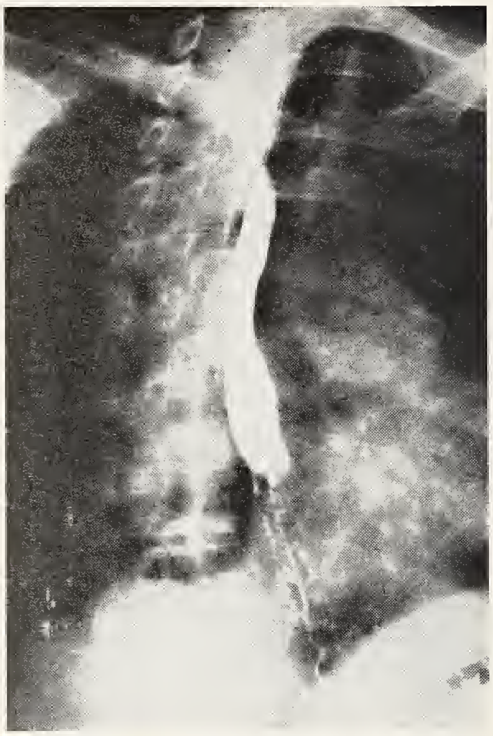

Fig. 1. Barium swallow showing coating of varices in lower third of esophagus.

Course in the Hospital: The patient was transfused with whole blood until a hemoglobin of 12.6 grams percent was obtained. On April 25, 1958, the patient became acutely hypotensive and was again actively transfused with whole blood. On subsequent days, he continued to have intermittent tarry stools and further transfusions of whole blood. His hospital course was complicated by bilateral basilar pneumonitis.

On May 19, 1958, the patient had an exploratory laparotomy, and a portocaval shunt was performed. The liver was moderately enlarged and the edges of the liver were rounded. The consistency of the liver was slightly more firm than normal, but no definite nodules were seen and the color of the liver was dark red. The spleen was three or four times normal size and dilated lymphatics and large lymph nodes were noted at the porta hepatis. The stomach and duodenum appeared normal as did the other abdominal organs.

The initial portal vein pressure was 350 mm. of saline, dropping to 140 mm. following the portocaval shunt. The portocaval shunt was accomplished by an end to side anastomosis. There were no operative complications and the patient had a normal post-operative course.

A needle biopsy (fig. 3) of the liver performed at the time of surgery showed multiple noncaseous epithtelioid granulomas and normal hepatic architecture. The granulomas were quite numerous and monotonous in size and appearance, composed of pale-staining epithelioid cells and central multinucleated giant cells. Most of the granulomas were proliferative and a few had small areas of hyalinization. The granulomas were surrounded by a narrow cuff of lymphocytes and were without necrosis. The majority of the lesions were in portal areas and obliterated the normal portal zone architecture. There was a very slight increase in fibrous tissue, if any, about the granulomas and in the portal areas, and this impression was confirmed by an azocarmine stain. A lymph node from the porta hepatis measuring 1.4 cm. in greatest diameter contained multiple noncaseous epithelioid granulomas. Acid-fast stain and methenamine silver stain were negative for organisms and the appearance was consistent with sarcoidosis. Bronchoscopy was performed on June 5, 1958, with the bronchi appearing normal and a normal mucosal biopsy obtained.

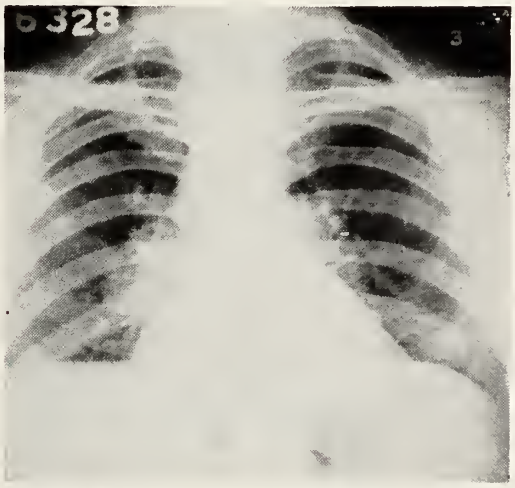

Fig. 2. Chest film showing lymphadenopathy, particularly in right hilus.

The patient's course since surgery had been satisfactory, the patient consuming a complete diet. At follow-up examination three months after discharge, the patient said he had been feeling very well, but had not been working because of weakness and some postural hypotension. The appetite was good and patient had no melena. Follow-up blood chemistries revealed a normal direct and total serum bilirubin, total protein of 8 grams percent with the ratio of albumin 2.9 to globulin 5.1. Alkaline phosphatase was 29 King-Armstrong units and the BUN was 8 mgm. percent. Hemoglobin was 12.3 grams percent and erythrocyte sedimentation rate 79 mm. in one hour. Chest x-ray showed no change. The patient was subsequently admitted to the hospital for repair of an inguinal hernia and tolerated the procedure well.

Discussion

The case presented is an example of portal hypertension and gastrointestinal hemorrhage due to sarcoidosis of the liver. The portal hypertension is documented by direct measurement at the time of surgery. Massive gastrointestinal hemorrhage occurred on several occasions. Esophageal varices were demonstrated by gastroscopy, barium swallow, and splenoportogram. The diagnosis of generalized sarcoidosis is satisfied by the presence of a clinical history consistent with sarcoidosis and the histologic demonstration of noncaseating epithelioid granulomas in both the liver and porta hepatis lymph nodes.

The few prior cases in the literature relating sarcoidosis to portal hypertension describe typical portal cirrhosis in the liver as the etiology of the portal hypertension. The functional abnormality of the liver as measured by liver function tests and the portal hypertension would suggest a considerable involvement of the liver by sarcoidosis and disruption of normal architecture. Despite this, the appearance of the liver at surgery was not suggestive of advanced cirrhosis, and the needle biopsy, although certainly a limited sample, disclosed normal architecture and minimal portal fibrosis.

Obliteration of portal vein radicles by sarcoid granulomas in the portal triads may obstruct enough of the portal flow to account for the demonstrated portal hypertension. This type of limited involvement may account for the pronounced hemodynamic abnormality and explain why more obvious distortion of hepatic architecture is not seen. This explanation is similar to a prior report[5] describing venous involvement by sarcoid lesions in the liver.

Summary

A case of sarcoidosis of the liver is presented in which the most important clinical findings were related to portal hypertension, esophageal varices, and subsequent gastrointestinal hemorrhage. An unusual feature is the paucity of portal fibrosis or distortion of liver architecture to account for the portal hypertension.

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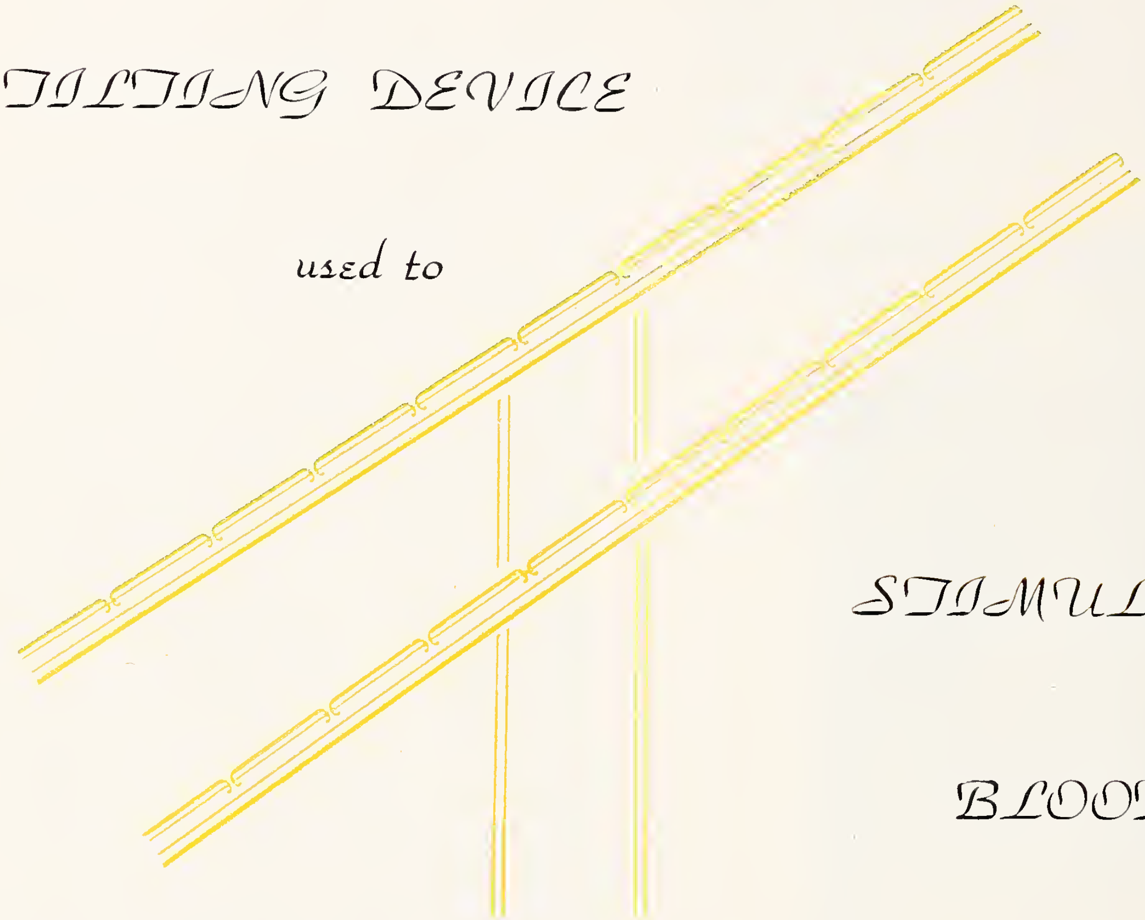
PERIPHERAL ARTERIAL INSUFFICIENCY

A TILTING DEVICE used to STIMULATE BLOOD FLOW



L. J. HOYER, M.D. *
Windom, Minnesota

A preliminary report of three Cases

THE MEDICAL TREATMENT of arterial insufficiency of the legs has included mechanical measures for improving the circulation. Buerger suggested postural changes in which the patient would first elevate the affected lower extremity until blanching appeared, then lower the limb over the edge of the bed in dependency until rubor occurred, and lastly rest the leg in a horizontal position; the cycle taking from 6-10 minutes (1).

Despite wide use, these exercises have never been proven to have value in permanently improving circulation (2). The ineffectiveness of these exercises might be due to the lack of physiological effect of alternate elevation and depression on the vascular bed, or it might be due to the limited period of use of the exercise by the individual patient. Further, the exercises are physically tiring and require the patient's entire attention.

Clinical improvement can often be noted, however in patients using an oscillating bed of the Sanders type. These are hospital beds attached to a special cradle so that the bed can be rocked on a transverse axis across its midportion and the foot of the bed alternately raised and lowered through 60 degrees (3). On this motorized bed the patient can obtain passive movement of the limb for many hours. The clinical study of Barker and Roth showed that its use offered immediate relief of rest pain as well as the pains of ischemic neuritis and ulceration (4). However, the oscillating bed is expensive, it is not portable, and in use it wholly occupies the patient during the period of treatment.

Passive postural stimulation of peripheral blood flow has been accomplished by the author through the use of a newly constructed mechanical device. The principle of the "rocking bed" is hereby applied to an extremity involved with an insufficiency of arterial blood supply. The need for thorough evaluation of a patient's vascular problem by means of careful physical examination and roentgen studies with aortograms and venograms must be borne in mind if the patient is to receive maximal medical and surgical help. The surgical correction of arterial insufficiency in an extremity should first be effected (whenever possible) before physical therapy measures such as this rocking device are used. The author is applying a well known principle in an interesting and novel fashion.

The device is available through Brown and Caldwell Company, Box 109, Windom, Minnesota

In attempts to provide a more simple and less costly method of mechanically stimulating peripheral blood flow, the machine described below was developed. This mobile and adjustable device consists of a padded board or cradle which is raised and lowered through a 30-50 degree range in an 80 second cycle by means of a small motor with a gear reduction drive. This cycle produced good alternation of the extremity's color: near pallour with elevation, and a red flush with depression. An extension cord with on-off switch permits easy control by the patient.

This device can be placed in front of a chair (Fig. 1) or it can be used in a collapsed position on a bed (Fig. 2). By resisting the motion of the device the patient can obtain active exercise of the afflicted extremity.

The apparatus is small and simple enough to be inexpensive. It is portable so that the patient can use it in different rooms. Most important, the patient can spend hours on the tilting board while performing other activities or sleeping.

Three case summaries give the results of treatment in the first three patients treated with this device.

Case Reports

Case 1. J. C., a 62-year old man, has been treated for diabetes mellitus since 1946 and now requires up to 35 units of protamine zinc insulin daily. Intermittent claudication was first noted in 1955 and this progressively worsened so that a fifty yard walk caused cramps. In late 1956 an ulceration developed on the fourth toe of his left foot after exposure of his feet to low temperatures and this required six weeks to heal. At this time it was noted that arterial pulsations could not be felt below the groin. He was in an auto accident in June, 1957, and sustained a dislocated right hip with comminuted acetabular rim and pelvis fractures. Ulcerations of the heel and lateral right foot subsequently developed. These did not heal and were associated with so much pain that the right leg was amputated above the knee on March 19, 1958. At surgery it was noted that the lumen of the femoral

Gratitude is the sign of noble souls.—*Aesop*

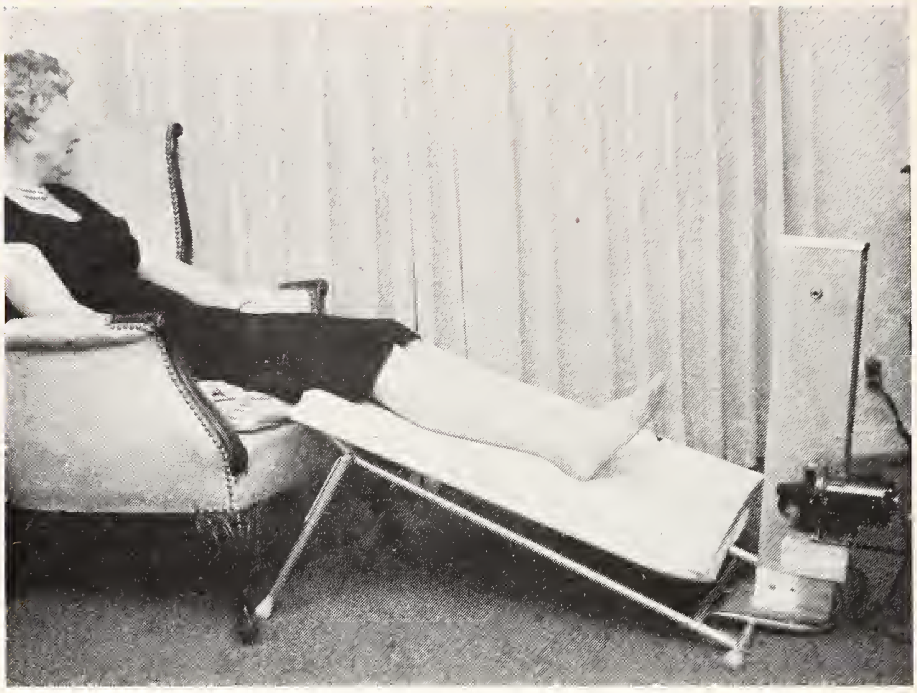


Fig. 1. Use of the Tilting device when the patient is seated.

artery at the level of amputation was totally occluded by atheroma and organized thrombus so that there was no bleeding from this vessel when it was transected.

Seven months later, October 8, 1958, he was seen because of an acute cellulitis of the left ankle. The acute infection subsided with bed rest, antibiotics, and daily warm soaks but pain persisted and a draining sinus developed in an indurated cyanotic area near the lateral malleolus. Continued conservative treatment over the next six weeks neither improved the sinus nor relieved the pain. On December 3, 1958, he began using the tilting device for 12 to 15 hours a day and within two weeks the pain had ceased and the sinus had healed. Since then, he has used the tilting device for 3 to 4 hours each day and has had no pain in his leg and no ulcerations have developed. He is ambulatory with a walker or crutches and has been active in a supervisory capacity since April of 1959.

Case 2. B. J., an 82 year old woman, had a left below-the-knee amputation in January of 1960 because of peripheral arterial disease and secondary gangrene of the left foot. On April 16, 1960, an acute arterial occlusion occurred in the right leg with a sudden coldness and pain below the knee and petachiae over the lower third of the leg. Rest pain persisted and a necrotic area developed on the medial aspect of the great toe. Use of the tilting device was begun on May 3, and her pain was relieved in a day and did not recur. The ulcer was completely healed by November 2, 1960. She continues to use the device for 14 to 16 hours each day.

Case c. L. N., an 85 year old woman,* was seen on March 1, 1960 for pain in her right foot of two weeks duration, claudication for the past two months, and

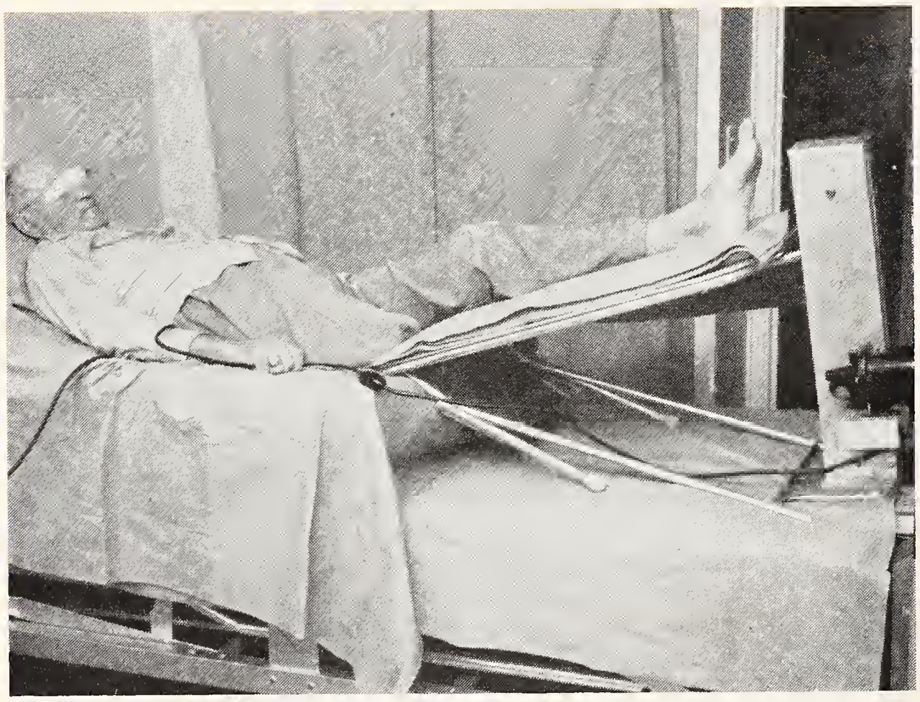


Fig. 2. Use of the device by a bedridden patient.

an ulceration of the lateral aspect of the right third toe. The femoral pulses were weak bilaterally and pulses were absent below this level. There were skin color changes and the venous filling time was markedly abnormal. After three weeks of intensive medical treatment she continued to have pain and the condition of her foot had worsened. There were infected cracks of the right heel, an infected ulcer of the great right toe, and the unimproved ulcer of the right third toe. Hospitalization for lumbar sympathetic blocks or a sympathectomy was advised at that time, but her daughter did not want the patient to be hospitalized and so treatment was continued at home. On March 21, 1960, she began using the tilting device 12 to 20 hours each day, in addition to continuing the previous medical therapy. By April 4, the infection was controlled and on June 1, the foot ulcers were completely healed. She was then free of pain in her feet and legs and could walk several blocks comfortably. She continues to be free of discomfort and no new skin lesions have developed. The tilting device is used for several hours each day.

*Treatment of this patient has been under the direction of Drs. R. A. Green and J. T. Grismer of the St. Louis Park Medical Center, St. Louis Park, Minn.

Discussion

Medical treatment of peripheral arterial insufficiency includes careful skin care, avoidance of trauma and tobacco, optimal temperature control, anticoagulants, and efforts to maintain and increase arterial supply and aid venous return from the affected limb.

The device described in this report is a mechanical means of increasing arterial supply and aiding venous return from the affected limb. It can be used by the patient for prolonged periods of active and passive motion and can, therefore, aid circulation to a degree impossible with Buerger's exercises. Its effects are similar to the Sanders Oscillating Bed but it has the advantages of lower cost and portability and it allows the patient to pursue other activities while passive exercise of the affected limb is obtained.

The use of the device is not an isolated treatment but rather one which can be added to standard medical and surgical measures. It is an adjunct which is not expensive, is not difficult to maintain, and which does not require constant medical attention. Patient cooperation is excellent and persistent since rest pain and the pains of ulceration and ischemic neuropathy are relieved. It is important to note that in these patients good healing of ulcerations has occurred during treatment with this device.

The varied course of peripheral arterial insufficiency and its complications is well known and a final evaluation of the device described here can only be obtained with more extensive clinical trial. The preliminary case reports suggest the usefulness of such a trial.

Summary

1. A tilting device is described for use as an adjunct in the optimal treatment of peripheral arterial insufficiency of the lower limb.
2. Three case reports are presented.

Acknowledgement

The help of Dr. J. T. Grismer of the St. Louis Park Medical Center is gratefully acknowledged. Beside making available his records of Case 3, he has made most helpful suggestions for the clinical use of this device and this preliminary report.

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CROCODILE TEARS SYNDROME (Bogorads' Syndrome)

This syndrome consists of paroxysms of unilateral lacrimation that occurs during the act of eating or drinking. The mythological supposition that the crocodile wept hypocritical tears while devouring its victim brought about the origin of the name. This condition does not occur by mechanical stimulation or chewing without food and it should not be confused with the tears associated with the ectropion of Bell's palsy.

Fatal Coronary Occlusion following TSH TEST

A report of two cases

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THE development of a purified preparation of thyroid-stimulating-hormone has added a useful tool for the study of thyroid function—the TSH test. The present form of this test was introduced about ten years ago by Stanley and Astwood[(1)] and by Querido and Stanbury[(2)]. It measures the response of the thyroid gland to exogenous thyrotropin as shown by an increase in the radioactive iodine thyroid uptake. It has been found to be of value in distinguishing primary myzedema from pituitary myxedema; euthyroid states from hypothyroidism, especially in patients who have been taking thyroid; and struma lymphomatosa from nontoxic adenomatous goiter.[(3)]

This paper is a report of two patients with coronary artery disease who died of myocardial infarction following the use of TSH as a test of thyroid function.

Case Reports

Case 1, H.R., U126639, a 46 year old white male, was admitted to Minneapolis Veterans Administration Hospital, March 18, 1960, because of chest pain. In September, 1959, he had been admitted to another hospital because of severe substernal chest pain of three hours duration. An electrocardiogram showed S-T, T changes of myocardial damage. The serum glutamic-oxaloacetic transaminase was 145 units. The serum cholesterol was 360 mg.%. He was treated with rest and anticoagulants. Following ambulation he developed severe, progressive angina pectoris requiring as many as ten nitroglycerin tablets a day.

Examination was normal except for bilateral arcus senilis. The pulse was 80 per minute. The blood pressure was 100/80 mm. Hg.

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[*] From the Veterans Administration Hospital, Minneapolis, Minnesota and the Department of Medicine, University of Minnesota Medical School.

[**] Resident in Internal Medicine.

Cardiac cinefluoroscopy showed a prominent left ventricle, slight left atrial enlargement, and minimal coronary artery calcification. His prothrombin values were maintained in the therapeutic range with warfarin. In the hospital he had marked improvement of his chest pain.

Thyroid function studies were done because of the hypercholesteremia. The basal metabolic rate was +5 and +1%. The serum protein-bound iodine was 4.4 micrograms %. The radioactive iodine uptake was 9% at 24 hours. A TSH test was done with three daily injections of 10 units of TSH* intramuscularly on April 24, 25, and 26. On April 26 he complained of nausea. On the 28th he developed severe chest pain, diaphoresis, and tachycardia. An electrocardiogram showed a supraventricular tachycardia with S-T, T changes. He was treated with intravenous lanotoside-C, oxygen, and vasopressors. These were unsuccessful, and he died the next morning with shock, cyanosis, and ventricular tachycardia.

Autopsy showed a recent posterior myocardial infarct with coronary atherosclerosis and a thrombosis of the right coronary artery. There was a 4 mm. colloid adenoma of the thyroid gland which was otherwise normal. The 48 hour uptake of radioactive iodine, determined on the post-mortem gland, was 38%.

Comment: This patient probably had normal thyroid function. Following stimulation with thyrotropin, he developed a fatal myocardial infarction.

Case 2. K.E., 964084, a 66 year old white female was admitted to University of Minnesota Hospital on October 27, 1960, for treatment of squamous cell carcinoma of the cervix. She had noted vaginal discharge for one year and vaginal bleeding for two months. During the previous two years she had noted mild weakness, fatigue, dyspnea on exertion, and occasional chest pain after exertion. She had slight cold intolerance. A small goiter had been present since age 15, but had not changed in size and had never caused any discomfort.

Examination showed a pale, depressed woman in no acute distress. The pulse was 80 per minute, blood pressure 110/80, oral temperature was 98 degrees F. There was sparseness of the lateral portions of the eyebrows. A small, firm, symmetrical goiter was palpable. There was a grade 2 early systolic murmur at the cardiac base. The skin was slightly dry but not myxedematous. The hair distribution was normal. Neurological examination, including deep tendon reflexes, was normal. On pelvic examination, a cervical mass, extending onto the vaginal mucosa, was noted.

Hemoglobin was 12.8 Gm.%, white blood count, 6,250 with a normal differential. The serum protein-bound iodine was 0.7 micrograms %; 24 hour radioactive iodine uptake, 7.4%; and serum cholesterol, 248 mg.%. The 24 hour urine excretion of 17-hydroxycorticoids was 5.9 mg. A 4 hour intravenous ACTH test (25 units) showed a fall in circulating eosinophils from 399 to 27 per cubic mm., and a rise in plasma 17-hydroxycorticoids from 22 to 60 micrograms % (Porter-Silber method(4)). A chest roentgenogram showed slight aortic arch calcification. Skull films were normal. An electrocardiogram showed complete left-bundle-branch block and occasional premature ventricular contractions. Biopsy of the cervical lesion showed squamous cell carcinoma.

The patient was begun on a course of radiation to the cervix which she tolerated well. Because of the possibility of secondary hypothyroidism, a TSH test was done. She was given ten units of TSH intramuscularly on November 16 and 17. She complained of local pain at the site of injection. The 24 hour radioactive iodine uptake increased to 43%. A scan of the neck showed normal distribution of the radioactivity. On November 20, she complained of dyspnea and choking sensations. The following day she developed severe, left-sided anterior chest pains radiating to the neck with dyspnea, tachycardia, and hypotension. An electrocardiogram showed notching of the QRS. She became cyanotic and died on the morning of November 22.

At autopsy, a recent, massive, antero-septal myocardial infarct and an old apical infarct were found. There were bilateral pleural effusions of 250 cc. and acute pulmonary edema. The carcinoma was confined to the cervix and vagina. The thyroid showed lymphocytic thyroiditis The pituitary was normal.

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* In the form of Thytropar, Armour Pharmaceutical Co., Kankakee, Ill.

Comment: This patient apparently had an isolated deficiency of thryrotropin secretion. Although she had only slight clinical evidence the laboratory data suggested marked hypothyroidism. She had normal adrenal cortical function and responded normally to ACTH. TSH stimulation was followed by an acute myocardial infarction.

Discussion

Until recently, the only reported complications of the TSH test were pain at the site of injection (3) and occasional mild urticaria.(5) Gabrilove and Soffer[6] found that prolonged treatment with TSH resulted in adrenal crisis in patients with hypopopituitarism, presumably because the increase in thyroid function resulted in a relative adrenocortical insufficiency. This occurred after much longer periods of stimulation (14 and 31 days) than those used in the TSH test. TSH has also been shown to promote the development of thyroiditis in guinea pigs.(7)

A recent paper by Baker and co-workers(8) reports electrocardiographic changes in euthyroid males who were given daily injections of ten units of TSH for five days. Four out of five patients developed premature ventricular contractions and S-T, T changes. Two patients showed "coving" of the S-T, T suggestive of myocardial infarction. None developed Q waves, elevations of the serum glutamic-oxaloacetic transaminase, or increase of sedimentation rate. None had clinical evidence of myocardial infarction. The electrocardiographic changes gradually returned to the pre-stimulation pattern in all.

The dangers of precipitating angina pectoris or myocardial infarction in myxedematous patients by the use of thyroid hormone are well known. Sclerotic coronary arteries, able to supply the reduced demands of the myxedematous patient, may become relatively insufficient with increased cardiac activity on thyroid treatment. There is a high incidence of arteriosclerotic heart disease in patients with myxedema. Bartels and Bell(9) found the incidence in their series to be 25%. In a series in which most of the patients were males, the incidence of symptomatic arteriosclerotic heart disease was 44%.(10) Blumgart and co-workers[10a], however, reported a low incidence of arteriosclerosis in a series of patients with severe rheumatic heart disease or cor pulmonale who survived one to thirteen years after total thyroidectomy. Although they were treated with small doses of thyroid to prevent the development of severe hypothyroidism, they showed increase in serum cholesterol levels. At autopsy the incidence of arteriosclerosis was no greater than in euthyroid patients of similar ages.

In hypothyroid patients with arteriosclerotic heart disease, it is necessary to begin treatment with small doses of thyroid which are gradually increased. In a patient with secondary hypothyroidism, the rise of endogenous thyroid hormone in the circulation resulting from TSH administration could have the same effect as large doses of exogenous thyroid. If the patient has coronary artery sclerosis, the results may be disastrous. Kurland[11] has suggested that TSH-induced thyroiditis may also cause increased release of thyroid hormone.

The normal thyroid gland is remarkably sensitive to TSH. Einhorn and Larrson[12] showed that the increase in radioactive iodine uptake reached a maximum in normals at a dose of 0.025 units of TSH per Kg. This corresponds to a dose of 1.5 units for a 60 Kg. individual. Larger doses of TSH resulted in an increase in the release of thyroid hormone, but did not further increase the uptake. The rise in uptake occurred after a latent period of 8-10 hours, reached a maximum in 18 to 24 hours, and decreased to normal at 5-6 days after TSH administration. The release of hormone from the gland began within 90 minutes after TSH. These data suggest that the current doses of 4 to 30 units of TSH may be excessive. The TSH test as done by Jefferies,(5) using 3-hour radio-iodine uptakes before and 24 hours after injection of 5 units of TSH, should be sufficient in most cases. Smaller doses may be indicated in cardiac patients.

The chief argument for using larger or repeated doses of TSH is that occasionally the unstimulated thyroid in secondary hypothyroidism gradually becomes less responsive to thyrotropin. Although it is usually not difficult to recognize the patient with hypopituitarism, occasionally the clinical picture is indistinguishable from primary myxedema. (13) In the cases of hypopituitarism studied by Shehan and Summers,(14) 15 showed complete destruction of the thyroid indistinguishable from primary myxedema. Other cases showed varying amounts of atrophy, lymphocytic infiltration and fibrosis. Patients with hypopituitarism, therefore, may be expected to show varying responsiveness to TSH.

In recent years, several case reports have appeared of patients with "isolated" deficiency of TSH. (15,16) These patients appear to have primary hypothyroidism without ACTH or FSH deficiencies, but respond to TSH. Case 2 of this report apparently falls into this group. To complicate matters, occasionally primary myxedema may be associated with adrenal or gonadal insufficiency.[17] Thus the separaiton of primary from secondary hypothyroidism may be a difficult task. The distinction is more than an academic one since patients with hypopituitarism may be thrown into adrenal crisis by treatment with hyroid alone.(13)

Patients with secondary hypothyroidism tend to have lower serum cholesterol levels(18) and probably have a lower incidence of heart disease than patients with primary myxedema. Sheehan and Summers did not mention coronary artery disease is their cases of hypopituitarism. They found a moderate degree of atheroma of the aorta, and basophilic masses in the myocardium similar to those seen in primary myxedema. According to Farquharson,(19) the heart in Simmonds' disease is usually small. The electrocardiogram shows low voltage of the QRS and flat or inverted T waves similar to myxedema. Organic cardiac lesions are rare. Lerman and Stebbins, (20) in 1942, reported a case of a 68 year old white female with Sheehan's disease who presented a typical case of myxedema. She developed an acute myocardial infarct from coronary occlusion and died four days after beginning treatment with thyroid, 200 mg. daily.

A review of several series of TSH tests did not reveal any other cases of myocardial infarction.(1-3, 5, 21-23) The charts of 48 patients who had TSH tests (mostly 10 units daily for two days) at the University of Minnesota did not reveal any other serious reactions. However, of 12 patients who showed a significant response to TSH, only two had evidence of heart disease. One was Case 2 of this report. The other was a 70 year old white female with hypopituitarism and chronic atrial fibrillation. Following 20 units of TSH, her radioactive iodine uptake rose from 8.9 to 25% at 24 hours. She experienced no difficulty.

Although most patients who respond to TSH will have normal hearts, with increasing use of the test and the great prevalence of coronary sclerosis, it is likely that other serious reactions will occur. TSH should be used in cardiac patients with the same degree of caution as thyroid hormone.

Summary

1. Two cases are reported in which fatal myocardial infarction occurred following administration of TSH. One was a euthyroid male with angina pectoris. The second was a woman with carcinoma of the cervix, isolated thyrotropin deficiency, lymphocytic thyroiditis, and coronary atherosclerosis.

2. Thyrotropin is useful in the evaluation of thyroid function, but must be used with caution in the presence of heart disease.

3. Currently recommended doses of TSH may be excessive for cardiac patients.

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Continued on page 386

Chest Pain associated with Hypertension in the Lesser Circulation

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ANGINA PECTORIS was described by Heberden in 1768[1], was related to arteriosclerosis of the coronary arteries by Jenner and Parry in 1799[2], and was attributed to myocardial ischemia by Allen Burns in 1809.[3]

Similar pain was recognized by Nothnagel in 1891, to occur in patients with mitral and aortic valvular lesions.[4] In 1908, Posselt[5] associated pain, cyanosis and pulmonary arteriosclerosis and applied the term "angina hypercyanotica," which was ascribed erroneously in this country to Vaquez and Giroux.[6] In 1909, Huchard distinguished "angina vera" occurring with coronary artery disease from "pseudo angina" occurring without coronary artery disease. He further differentiated both of these pain syndromes from chest wall pain.[7] Recent autopsy studies have confirmed the absence of significant coronary atheromata in patients with recorded anginal type pain.[8-13] Anginal pain also occurs in association with congenital heart conditions, particularly with hypertension of the lesser circuit and including the primary form of pulmonary hypertension.[11-22] In 1952, Viar and Harrison[12] termed this syndrome "pulmonary hypertensive pain" since they observed elevated pulmonary artery pressures in patients who had angina-like pain in conjunction with various heart lesions. However, studies by Stuckey[13] in 1955, and Lasser and Genkins[18] in 1957, revealed this term untenable since they observed anginal pain in patients with pulmonary stenosis who therefore had elevated pressures in the right ventricle but not the pulmonary artery.

Hypotheses advanced to explain this pain, generally postulating ischemia of the myocardium, have failed to encompass all the observed phenomena. Therefore, hemodynamic explanations were sought.

Methods

This was a retrospective study of 58 patients with various congenital heart lesions who had been evaluated clinically and by conventional catheterization of the right side of the heart at the Northwestern University Medical School Cardiac Laboratory during the past seven years.

The studies included regular four position radiographic and fluoroscopic studies, 12 lead electrocardiogram, and phonocardiogram. The degree of main pulmonary artery enlargement was estimated from the posteroanterior and lateral chest films, and was classified as follows: 0 if the pulmonary conus area was flat or concave, and 1 to 4 plus with lesser to greater degrees of convexity as judged by the radiologist. The diameter of the descending branch of the right pulmonary artery was measured just above its bifurcation whenever possible. A width greater than 14 mm. was considered abnormal.[23]

Right ventricular hypertrophy was classified into diastolic and systolic overload patterns according to electrocardiographic criteria of Sodi-Pollares.[24] The degree of systolic overload was estimated by the height of R or R′ waves in lead VI and termed from 1 to 3 plus. An R′ wave greater than 10 mm. in height or a reversed R:S wave ratio was considered 1 plus systolic overload. Lacking an S, R wave less than 10 mm. in height was considered 2 plus and when greater than 10 mm. 3 plus.

The systemic cardiac outputs, the arterial oxygen saturations and the pressures in the pulmonary artery, right ventricle and right atrium were tabulated separately for the patients with anginal type of chest pain and for the patients with no or non-anginal chest pain (Table I.). The values in the two groups were tested statistically.

The specific lesions studies included: atrial septal defect — 30 cases; pulmonary stenosis — 13 cases; combined atrial septal defect and pulmonary stenosis — 4 cases; Eisenmenger's complex — 2 cases; primary pulmonary hypertension — 1 case; tetralogy of Fallot — 6 cases; and idiopathic pulmonary dilatation — 2 cases.

Pain was considered anginal if it was substernal or precordial in location, dull and aching, or oppressive in quality, and of more than fleeting duration.

Results

Of the 58 patients, twenty (34 per cent) had chest pain. Six patients (10 per cent) had angina-like pain, and fourteen (24 per cent) had non-anginal pain. In a study by Blonsky, Kezdi and Wehrmacher, 43 per cent of 189 patients with mitral valve lesions experienced chest pain. Sixteen per cent of these patients had pain of anginal nature.[25]

Of the six patients with angina-like pain, five were female in contrast to the male predominance among patients with ordinary angina pectoris.[26]

The ages of the patients at the onset of anginal pain were 16, 24, 37, 51, 55 and 63 (Table III). The four older ages were consistent with that of ordinary angina pectoris. But the two younger patients were unlikely candidates for coronary artery disease, and doubly so, considering that they were women. Its absence was demonstrated by autopsy in the 24 year old patient who had Eisenmenger's complex.

All six patients with angina-like pain described their distress as dull-aching, or oppressive in nature; substernal or precordial in location; and usually with radiation to the left shoulder or arm. The pain usually was of moderate albeit unmeasured severity and varied in duration from minutes to as long as several days.

Five of the six patients with anginal pain timed the onset or aggravation of their pain with effort, emphasizing a diagnostic difficulty for those unfamiliar with this syndrome. The other patient experienced pain while at rest in a hospital bed. Nitroglycerine was not effective for relief of the pain. She is the same 24 year old female patient described previously with Eisenmenger's complex, who had no evidence of coronary artery disease at autopsy.

Among the fourteen patients with non-anginal pain, less than one-half experienced their distress in the precordial or sternal areas. The pain was as apt to be sharp as dull and radiated in only 21 per cent. Rather than a deep seated pain as in the anginal group, the non-anginal pain was more often at the surface and it was usually mild although of unmeasured severity. The duration of the pain was varied but often fleeting. The pain was usually not associated with effort but might be provoked by smoking or lying on the left side (Table III.)

TABLE I

NORMAL AND ABNORMAL HEMODYNAMIC VALUES

Location	Pressures	Normal mm. Hg.	Abnormal mm. Hg.	Mild	Moderate	Extreme
Right Atrium (R.A.)	Max.	2—8	> 8	....	>10	....
	Min.	—2—2	> 2	....	....	....
	Mean	0—6	> 6	....	....	....
Right Ventricle (R.V.)	Syst.	18—28	....	29—49	50—79	>79
	Diast.	0—6	> 6	....	....	....
Pulmonary Artery (P.A.)	Syst.	18—28	....	29—49	50—79	>79
	Diast.	6—16	>16	....	....	....
	Mean	12—20	....	20—39	40—59	>59
Systemic Arterial-Right Ventricular Difference*		>60	<60	30—59	1—29	< 1
Systemic outflow index		>2.8 L/ min./m² BSA	< 2.8	....	....	< 2.5
0₂ Saturation		96%	<96%	....		<90%

*Arbitrarily defined for this study

Patients with anginal pain generally tended to have a much higher incidence of moderately to extremely abnormal values than those patients without anginal pain, except in systemic oxygen saturation, diastolic pressure difference between the systemtic artery and right ventricle, and pulmonary artery distention. The right ventricular systolic pressures were moderately to greatly elevated in all six cases of patients with anginal type pain. The lowest value was 64 mm. Hg. The diastolic pressures in the right ventricle were elevated in five of the six cases. In conjunction, the pulmonary artery pressures were elevated in the four patients who had no pulmonary stenosis. The right atrial maximal pressures were elevated in five of the six cases. The systemic flows were greatly reduced in five of the six cases.

There was at least moderate right ventricular hypertrophy (2-3 plus systolic overload pattern) by electrocardiogram in five of the patients. The incidence of 2 to 3 plus pulmonary artery distention estimated radiographically was the same in both groups (Table IV). In the group of patients with anginal pain, pulmonary artery distention was found in the cases with atrial septal defect but not in the cases with pumonary stenosis or Eisenmenger's complex. The descending branch of the right pulmonary artery was enlarged in only one of the patients with anginal chest pain.

Comparison of averages of hemodynamic measurements of those patients with anginal pain to those patients with no or non-anginal pain permit the following statements (Table V.):

1. There was no difference in the averages of cardiac output or systemic oxygen content between the two groups.
2. The anginal group showed a slightly higher average of right artial maximal pressures. The difference between the two groups was 3 mm. Hg.
3. The anginal group showed a higher average of right ventricular systolic pressures. The difference between the two groups was 53 mm. Hg.
4. The anginal group, excluding those patients with pulmonary stenosis, showed a higher average of pulmonary artery systolic pressures. The difference between the two groups was 53 mm. Hg.
5. The anginal group showed a lower average systolic pressure differences between the systemic artery (brachial artery in most instances, aorta in a few) and the right ventricle. The difference between the groups was 32 mm. Hg. There was no difference between the two groups when the diastolic pressures in the brachial artery and right ventricle were compared.

Statistically the differences between the two groups were not significant by the "t" test.

TABLE II

CHEST PAIN IN PATIENTS WITH CONGENITAL HEART DISEASE

Characteristics of Pain	Simulating Angina 6 patients (10% of 58 patients)	Non-Anginal 14 patients (24% of 58 patients)
1. Location	100% substernal or precordial. Usually deep	43% sternal or precordial. Frequently surface.
2. Quality	100% dull, ache or oppressive.	28% sharp and 28% dull, ache. Frequently vague or irritating.
3. Radiation	66% to shoulder, arm; especially left side.	21% neck, shoulder, arm
4. Intensity	Generally moderate but unmeasured.	Generally mild but unmeasured.
5. Duration	Varied (minutes, days).	Varied (minutes, days). 36% fleeting.
6. Fluctuation/periodicity	No pattern; frequently associated with effort.	No pattern.
7. Circumstances of occurrence and subsidence	83% with effort. Nitroglycerine for relief in one patient was ineffective.	92% without effort. Onset with smoking in one patient or lying on left side in another. Rubbing relieved one patient.

TABLE III

DATA OF PATIENTS WITH ANGINAL PAIN

Patient	Lesion	Sex	Age at Onset of Pain	Right Atrium Max./Min. (mean) mm. Hg.	Right Ventricle Syst./Diast. mm. Hg.	Pulm. Artery Syst./Diast. (mean) mm. Hg.	Index of Syst. Flow through aorta L/min./M^2	Syst. R.V. Pres. Diff. Syst./Diast. mm. Hg.	O_2 Sat. and O_2 Cont. Vol. %	R.V.H. by ECG	X-Ray Estimate of Pulmonary Artery Enlargement
R. O.	ASD	F	55	10/0 (3)	95/1	82/35 (48)	1.9	47/67	92% 17.3	S++	L & RMPA enlarged*
R. P.	ASD	F	63	12/3 (7)	64/10	58/16 (30)	2.3	120/68	97% 20.3	D	PA & L—4+ DBRPA ?
H. P.	ASD	F	37	4/0 (1)	128/12	130/40 (70)	2.3	—18/44	90% 18.5	S+++	PA & L—4+ DBRPA—large
G. S.	PS	M	51	12/0 (4)	135/10	18/10 (13)	1.9	—25/55	96% 21.3	S++	PA—O, L ? DBRPA—12
K. K.	PS	F	16	10/2 (6)	160/5-10	15/6 (10)	3.4	10/70	93% 17.1	S+++	PA—O, L—? DBRPA—8
E. G.	EC	F	24	12/6 (8)	120/10	120/80 (93)	2.4	—5/65	65% 12.8	S+++	PA & L ? DBRPA—10

ASD—Atrial septal defect
PS—Pulmonary stenosis
EC—Eisenmenger's complex
RVH—Right Ventricular hypertrophy
S—Systolic overload pattern graded 1 to 3+
D—Diastolic overload pattern

*—Roentgen films not available for review. Radiologist's report used.
L & RMPA—Left and right main pulmonary artery
PA—Postero-anterior view estimate of pulmonary artery (conus) enlargement.
L—Lateral view estimate of pulmonary artery (conus) enlargement.
DBRPA—Descending branch of right pulmonary artery width in mm.
?—No definite enlargement.

Discussion

A discussion of some of the hypotheses that have been advanced to explain the cause of the pain is in order.

In 1908, Posselt[5] noted the association of chest pain, pulmonary arteriosclerosis and cyanosis (angina hypercyanotica). Burgess and Ellis[27] in 1942, supported this view. Cyanosis is certainly not essential. Only one of the six cases observed to have anginal type chest pain in this series had significantly low oxygen saturation (below 90 per cent saturation). In contrast, none of the six patients with Fallot's tetralogy experienced pain although oxygen saturations were between 71 and 88 percent, and they had moderate to great elevation in right ventricular pressure.

Blackford[9] in 1940, suggested that inadequate left ventricular output might be the cause. Brill and Krygier[11] in 1941, Turchetti and Schirosa[15] in 1952, and Stuckey[13] in 1955 supported this theory. Five of the six patients with anginal pain in this study had markedly low systemic outputs (less than 2.4 L/min./M^2) which tends to support this view. However, one patient had a normal output, and thus, decrease is not absolutely essential for this syndrome to appear.

Friedberg[28, 29] in 1949, postulated that increased pressures in the right atrium and ventricle might interfere with coronary flow by impeding venous drainage. Dresdale[16] *et al,* in 1951, finding elevated right ventricular enddiastolic pressures in patients with primary pulmonary hypertension and anginal pain, supported this idea. Results in this series lend support to this possibility since elevated systolic right atrial pressures of 10 and 12 mm. Hg. and right ventricular diastolic levels of 4 to 6 mm. Hg. were found in five of six patients. The study by Blonsky[25] *et al.* of patients with mitral stenosis demonstrated that the syndrome could occur independent of elevation of pressure in the right atrium.

In 1952 Viar and Harrison,[12] who had termed this syndrome "pulmonary hypertensive pain," believed the pain was due to distention of the pulmonary artery Braun[17] *et al,* found pain in a patient with idiopathic pulmonary distention. In this series distention was found in only one-half of the cases with anginal pain and the same incidence occurred in those patients with no or non-anginal pain.

Three years ago Lasser and Genkins,[18] dissatified with the above postulate, proposed that an increase in right intraventricular pressure during systole could effectively oppose the perfusion force of the aortic pressure. Three of the six patients with angina type pain in this study, had negative pressure differences between the systemic artery and right ventricle, and one patient had a low difference of 10 mm. Hg. Two patients had

TABLE IV

INCIDENCE OF ABNORMALITY

Abnormality		mm. Hg.	With Anginal Pain (6 Patients)	No or Non-Anginal Pain (52 Patients)
Right Ventricle	Syst.	>49	100%	50%
	Diast.	> 6	83%	19%
Right Atrium	Max.	>10	83%	25%
	Mean	> 6	33%	6%
Pulmonary Artery	Syst.	>49	66%	17%
	Diast.	>16	66%	16%
	Mean	>39	50%	12%
Syst. Art. R.V. Dif.	Syst.	< 1	50%	19%
	Diast.	>40	100%	100%
Systemic Flow		< 2.5 L_2 min./m	83%	43%
0_2 Saturation		<90%	33%	27%
RVH by ECG*		2-3 S+	83%	38%
Pulm. Art. Distention by X-ray**		2-4+	50%	44%

TABLE V

COMPARISON OF

	No. of Pts.	R.A. Max./Min. (mean) #
WITH PAIN:	6	
Mean		10/2 (5)
S.D.		3.1, 2.4 2.6
NO PAIN:	52	
Mean		7/1 (3)
S.D.		3.5, 2 7.1
"t" Values@		0.7, 0.2 0.2

*—ECG reports of all patients were available. ECG traces of 45 patients were available for review and classification including all the patients with anginal pain.

**—X-ray reports of all patients were available. X-ray films of 38 patients were available for review and estimation of degree of pulmonary artery distention, including all but one of the patients with anginal pain.

large positive differences.

While coronary artery flows occurs during systole, the perfusion of the myocardium takes place during relaxation of the heart in diastole.[30] Therefore, diastolic pressure difference between the systemic artery and right ventricle was measured as well. Since the lowest diastolic pressure difference was 44 mm. Hg., Lasser and Genkins,[18] proposal transposed to the diastolic period needs no real consideration.

Sternberg[8] in 1923, suggested that compression of the left coronary artery between an enlarged left atrium and pulmonary artery might produce this pain. Scherf and Schonbrunner[31] in 1935, believed that pulmonary emboli caused reflex constriction of coronary vessels and thus was a source of pain. The data in this study did not allow evaluation of these two hypotheses.

Summary and Conclusion

1. Congenital heart disease frequently is manifested by pain in the chest. Twenty-four per cent of our patients experienced chest pain and ten per cent simulated angina pectoris sufficiently so that it could be confusing diagnostically.
2. This anginal type pain is associated with elevated pressures in the lesser circulation but not necessarily including the pulmonary artery.
3. None of the hypotheses adequately explains the observed clinical syndrome.
4. The abnormal hemodynamic data which most frequently correlated with the anginal pain were: elevated right ventricular systolic and diastolic pressures; elevated right atrial maximal pressure; reduced systemic blood flow; and right ventricular hypertrophy by electrocardiogram.
5. If myocardial hypoxia is the pain stimulus it is possible that a combination of the above abnormal hemodynamic processes with right ventricular hypertrophy may account for the syndrome of chest pain in patients with hypertension in the lesser circuit.

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Continued on page 386

TABLE V (Continued)

HEMODYNAMIC MEASUREMENTS OF ANGINAL PAIN GROUP

No. of Pts.	Right Ventricle Syst./Diast.	No. of Pts.	Pulm. Artery Syst./Diast. (mean)	No. of Pts.	Pulm. Artery Syst./Diast. (mean)	No. of Pts.	Syst. Art. R.V. Pres. Dif. Syst./Diast.	No. of Pts.	Syst. Fl. L/min./ M^2BSA	No. of Pts.	Art. 0_2 Content Vol. %
6		4*		2**		6		6		6	
	117/8		92/19 (22)		16/8 (12)		21/61		2.4		17.9
	33, 4		30, 19 22		2.4, 4 5		54, 10		.6		3
52		26		11		51		48		52	
	64/4		39/15 (23)		17/7 (10)		53/65		2.7		17.7
	41, 3		24, 12 16		6, 3 3		46, 4		1		2.4
	1.0, 0.8		1.4, 1.1 1.2		0.2, 0.2 0.5		0.4, 0.2		0.3		0.1

#—All pressures in mm. Hg. S.D.—Standard deviation

*—Pulmonary artery pressures in patients with atrial septal defect and Eisenmenger's complex.

**—Pulmonary artery pressures in patients with pulmonary stenosis @—"t" values all of greater probability than 0.05

The Minneapolis Academy of Medicine

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During the early 1900's "The Minneapolis Medical Club" proved extremely profitable to a group of young doctors. Reports have it that it ceased to exist because of inertia and differences in medical politics. Later Doctors George D. Head and R. E. Farr, members of that organization, urged Doctor E. L. Gardner and me to form a similar organization. Then I invited nine other young doctors to meet at Dayton's Tea Rooms on January 17, 1920. The purposes of such a club were discussed and at that first meeting the Cinical Club of Minneapolis was organized. I had the honor of being elected its first president.

A constitution and by-laws were subsequently drawn up incorporating its purposes and regulations. It was ruled that none in practice more than ten years nor less than five years was eligible to apply for membership; that an applicant must have had post graduate training and must have declared his intention to specialize in some branch of medicine. There were no colleges of medicine or surgery and no specialty boards at that time.

In order to keep the organization for young men it was decided to automatically transfer a member of ten years standing to the senior group. This made room for incoming new members. This plan would give the younger members an opportunity to present essays, report the results of personal effort and research and present interesting cases. These opportunities were seldom afforded by the Hennepin County Medical Society or the Minnesota State Medical Association. It was also designed to promote good fellowship, to stimulate individual effort along the lines of both the art and science of medicine, and to foster the reputation of Minneapolis as a medical center.

Four surviving members are Doctor Max Seham, Doctor Charles N. Brooks, Doctor Frederic Wittich, and Doctor Stanley R. Maxeiner, Sr. The six members deceased are: Doctor Edwin L. Gardner, Doctor William R. King, Doctor Herbert Thompson, Doctor Floyd O. Woodard, Doctor Frederick Souba and Doctor Clifton Boreen.

During the first few years when no member had access to any club, meetings were held at various hotels or the Young Mens Christian Association. In later years as the society increased in stature and its members in affluence most meetings have been held at the Minneapolis Club.

As the years have passed the prestige of the organization has grown and the requests for memberships have increased. There has always been a limit to the number of members and occasionally it has been advisable to increase this limit.

In 1924 the name of the Clinical Club of Minneapolis was changed to the Minneapolis Clinical Club and the active membership was increased to thirty.

The reports of the secretary and treasurer for the senior meeting in 1940 provide an index of the almost unbelievable economic trend of the last twenty years. At this meeting there were seventy-eight dinners @ $1.75, and two hundred forty martinis @ $.25. Tickets for the meeting and the dinner were $3.00.

The ten founding members had no expectation that their society would grow into a perpetuating organization of such dignity and talent. As this became apparent, the late Doctor Roscoe Webb in 1941 urged changing the name to the Minneapolis Academy of Medicine. This name was adopted.

Good councilors lack no clients.—*Shakespeare*

In 1951 the Academy was incorporated under the laws of the State of Minnesota. Article II of the incorporation is quoted:

> "The purpose of this corporation shall be to promote the education and scientific welfare of its members through regular meetings for the presentation and discussion of original papers on clinical subjects, abstracts from medical literature, abstracts of medical history, studies of clinical cases, pathological specimens and other clinical information; to promote better relations and closer cooperation among members of the medical profession; to aid specialization in medicine; to promote Minneapolis as a medical and surgical center; and to do any and all things which tend to promote any or all of the foregoing objects."

The present requirements for active membership are: 1.) graduation from medical school within twenty years; 2.) board certification; 3.) practice in Minneapolis; 4.) publication of at least one scientific paper; 5.) presentation of an inaugural thesis after election.

Since 1931 the January meeting has been assigned to the senior group, who may present a program prepared by their own members or obtain an outside speaker. The annual senior meeting for 1960 celebrated the fortieth anniversary of the organization. As one of the living charter members, I was asked to serve as chairman and to arrange the program.

As of January 18, 1960, the Academy had grown to include seventy active members, seventy-six senior members, eight associate members, and seven honorary members. The honorary members are: Doctor Adolph M. Hanson, Doctor Benjamin J. Clawson, Doctor E. T. Bell, Doctor Edward J. Huenekens, Doctor Henry L. Ulrich, Doctor Walter H. Judd, and Doctor Harold S. Diehl.

As a growing scientific organization for the promotion of specialty practice in our community, the Minneapolis Academy of Medicine has far exceeded the dreams of the ten of us who founded it so humbly forty years ago.

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It is not the oath that makes us believe the man, but the man the oath.—Aeschylus

The Use of IBM Tabulating Methods in the Analysis of Medical Data

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Statistical studies have been broadened to include huge segments of our population. Many large hospitals can use more scientific methods in handling the thousands of case entries of data involved in a large study. This discussion presents helpful suggestions for those interested in evaluating large agregates of data with facility.

IT IS FREQUENTLY worth while in medicine to evaluate a large number of clinical cases. When a really significant number of cases is summarized, it becomes an almost impossible task to completely analyze the material. Abstracting information from several hundred records under even a few headings is a long and difficult job. When the abstracting finally is completed, the compilation of data becomes further confusing, time-consuming and probably inexact. The use of mimeographed data sheets set up for each particular study, on which data can be simply checked and then converted to IBM* tabulating (punch) cards, is of unlimited help in such projects. Mechanized sorting and tabulating probably are readily available and yet little used in many medical facilities.

Experience with four large series of clinical case studies in the past 6 years has proven the value of punch-card tabulation in this type of study. These studies have required the surveyal of charts of more than 5,000 patients. The vast amount of material covered and the data produced, as well as the remarkable ease with which such quantities of information became readily reduced to clear and concise statistics, were most gratifying. It is the purpose of this article to describe and illustrate the procedure of setting up data sheets that make use of this method of evaluating clinical material.

As in any comprehensive study, the information to be analyzed must be placed in certain columns or categories. The various subjects within the study can be as detailed as desired. The tabulating card on which the abstracted data

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*International Business Machines Corporation finally are punched is seen in Figure 1. This card has 80 columns, each with 10 different numerals from 0 through 9. In even the largest of the case studies done to date, less than the number of available columns have been utilized.

When all possible classes of data that the investigator wishes to know from the history or clinical chart is known, the check list data can be started. It is wise to become familiar with the general subject under study, and it is further advantageous to review several charts prior to finalizing the data sheet so that all the information desired and obtainable can be included. As seen in Table 1, this data sheet should begin with basic information, such as the patient's hospital number, year of treatment and so on. The same number of columns on the tabulating card are required as there are digits in the hospital or case numbers. Hospital numbers in the millions would thus use up columns 1-7, and the actual hospital number is punched on the card that will represent that individual patient. The investigator studying the record of patient #1,702,448 would simply write these numbers on the mimeographed data sheet. Later, the key-punch operator will punch out 1 in the first column, 7 in the second, 0 in the third and so on. The year that the patient was operated on or studied may be significant and can be recorded by writing in '58 or '59, thus using up columns 8 and 9 on the card that will be punched later to represent that patient. Columns are usually devoted to other fundamental data such as age, sex, and race, as can be seen in Table 1.

When specific categories of information are to be set up, one or more columns may be used depending on how detailed the summary is to be. Usually the number of choices 0-9 suffice. In

TABLE I

ARRANGEMENT OF BASIC DATA: HOSPITAL NUMBER,
YEAR OF OPERATION OR TREATMENT,
AGE, SEX AND RACE

COLUMNS				
1- 7	P. F. Number			
8- 9	Year			
	41	0	46	5
	42	1	47	6
	43	2	48	7
	44	3	49	8
	45	4	50	9
-10	Age: (Decade)			
	0- 9	0	50-59	5
	10-19	1	60-69	6
	20-29	2	70-79	7
	30-39	3	80-89	8
	40-49	4	90-99	9
-11	Sex			
	Male			0
	Female			1
-12	Race			
	Caucasian			0
	Negro			1
	Mongolian			2
	American Indian			3
	Malayan			4
	Other			5

TABLE II

ARRANGEMENT OF DATA FOR PERFORATED ULCERS

COLUMNS		
-31	Site of Perforation — Pyloric Ulcer	
	Anterior - superior	0
	Anterior - inferior	1
-32	Error in locating Site	
	Gastric instead of duodenal	0
	Duodenal instead of gastric	1
-33	Size of Perforation	
	1 to 3 mm.	0
	3 to 5 mm.	1
	5 to 7 mm.	2
	7 to 10 mm.	3
	1 to 2 cm.	4
	2 or over cm.	5
-34	Site of Perforation — Stomach	
	High	0
	Middle	1
	Low	2
	Prepyloric	3
	Anterior Wall	4
	Posterior Wall	5
	Greater Curvature	6
	Lesser Curvature	7

TABLE 3

ARRANGEMENT OF TIME DATA
FOR PERFORATED ULCERS

COLUMNS		
-18	Time Intervals — Perforation to Hospitalization	
	0 to 3 hours	0
	3 to 6 hours	1
	6 to 12 hours	2
	12 to 18 hours	3
	18 to 24 hours	4
	24 to 36 hours	5
	36 to 48 hours	6
	48 or more hours	7
-19	Time Intervals — Admittance to Surgery	
	0 to 3 hours	0
	3 to 6 hours	1
	6 to 12 hours	2
	12 to 18 hours	3
	18 to 24 hours	4
	24 or more hours	5

TABLE 4

DATA CHECK LIST FOR GASTRIC RESECTIONS

Pt. Name ____________________
Last First Initial

Columns:	
1-7 PF Number	________
8-9 Year of Surgery	________
10. Age by Dec: (0-9-0; 10-19-1)	________
11. Sex	
Male	0________
Female	1________
12. Race:	
Caucasian	0________
Negro	1________
Mongolian	2________
Malayan	3________
Am. Indian	4________
Other	5________
13. Services:	
WMH	0________
CME I	1________
CME II	2________
CME III	3________
14. Single chief problem:	
Sudden severe abd. pain	0________
Mild or mod. ulcer-like pain	1________
Vomiting without hematem.	2________
Hematemesis	3________
Melena	4________
Mass &/or pain	5________
Back pain or referred pain	6________
Jaundice	7________
Syncope, vertigo, weakness or anemia, etc.	8________
Nausea or anorexia	9________
15. Single chief problem (cont.)	
Change in bowel habits	0________
Cramps or abd. soreness	1________
Weight loss	2________
Dysphagia	3________
Acute alcoholism	4________
Asymptomatic on entry at time of gastric surgery	5________
Inadequate history	6________
Other	7________
16. Assoc. complaints at time of entry for gastric surgery:	
Sudden severe abd. pain	0________
Mild or mod. ulcer-like pain	1________
Vomiting without hematem	2________
Hematemesis	3________
Melena	4________
Mass &/or pain	5________
Back pain or referred pain	6________
Jaundice	7________
Syncope, vertigo, weakness or anemia, etc.	8________
Nausea or anorexia	9________
17. Associated complaints (cont):	
Change in bowel habits	0________
Cramps or abd. soreness	1________
Weight loss	2________
Dysphagia	3________
Acute alcoholism	4________
Dyspnea or orthopnea	5________
Ankle or leg edema	6________
Chest pain or pleurisy	7________
Bone pain	8________
Other	9________
18. Revelant past history:	
Ulcer dx. or compatible dx.	0________
Vomiting or dx. pylor. obst.	1________
Hematemesis	2________
Weakness, dizziness, fainting, or anemia	3________
Recurrent or chronic pain	4________
Previous perforation	5________
Weight loss	6________
Nausea or anorexia	7________
Back pain or referred pain	8________
19. Relevant past history (cont):	
Chronic alcoholism	0________
Dx of cirrhosis	1________
Jaundice	2________
Hepatitis	3________
Change in bowel habits	4________
Fecal vomiting	5________
Previous gastric surgery	6________
Other	7________
20. Duration of symptoms pre-op:	
Less than 1 day	0________
2 - 7 days	1________
1 wk. - 4 wks.	2________
1 - 2 months	3________
3 - 12 months	4________
1 - 2 years	5________
2 - 5 years	6________
5 - 8 years	7________
8 - 10 years	8________
11 or more years	9________

Table 2, the check list for analysis of the diameter of the perforation in a large group of perforated gastric ulcers was arbitrarily divided into 6 choices. The site of the perforation can be designated in another column. The person abstracting the chart will check the proper size and location. In table 3 the duration of time from the patient's first symptoms of ulcer perforation until his admission to the hospital and the interval of time from admission to operation were divided into segments of 0 to 3 hours, 3 to 6 hours, 6 to 12 hours, 12 to 18 hours and so forth. A sample data sheet is seen in part in Table 4.

When the information is placed on punch cards, the next step is the listing of data desired. The tabulation of the simple categories such as frequency of symptoms, complications, types of operations and results of treatment will be complete in themselves. Any and all combina-

TABLE 5

DATA FROM TABULATING MACHINE SHOWING AMYLASE LEVELS IN PERFORATED ULCERS

AMYLASE VALUES		TOTAL COUNT
Normal	0	493
100 - 200	1	186
200 - 300	2	47
300 - 400	3	39
400 - 600	4	13
Over 600	5	12
		790

tions of this data can be matched and accurately tabulated on the IBM machine. The most exhaustive and detailed analysis is available. The results come from the tabulating department in forms ready made for easy analysis and in almost ready made table form (Tables 5 and 6).

The authors must provide the tabulating department with a clear description of the data desired. As long as the cards have included the details of the case, any data can be produced. The information classified under the age decade, for example, can be matched against other columns of information, such as type of operation, complications, follow-up, pathology and year of operation. As much intricacy of detail as desired can be developed. For example, the number of 70 year-old women who had symptoms of ulcer less than 1 year without bleeding, who entered between 3 and 6 hours after onset of their ulcer perforation, who were in shock, who had postoperative pneumonia and left subphrenic abscess who had normal preoperative serum amylase determinations, who did not have subphrenic air and who died after emergency closure of the ulcer could, if necessary, be sorted for analysis. Although ridiculous, this illustrates the type of exhaustive summation possible from information gathered in the manner described.

This method of mechanical classification and tabulation also has been useful for the statistical coding of diagnoses and operations done in our Department of Surgery. Where a large volume of surgery is being done, the analysis of such data into clear, concise and accurate totals provides an informative picture in a very short period of years. With little effort, data relative to both disease categories and surgical statistics could be matched with similarly developed information from other institutions, thus making available a massive amount of clinical data.

Summary

The use of IBM tabulation procedures provides researchers with an unparalleled method for the analysis of large numbers of cases in all phases of medicine. The data thus coded are easily stored and and yet ready for reference at any time. Methods for constructing data sheets and compiling the information prior to its transference to tabulation cards are briefly explained and illustrated. The machines required for such work are now generally available in or near many large medical facilities, and their adaptation to studies in clinical medicine should be eagerly sought by the many physicians interested in the analysis of large series of cases.

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TABLE 6

AMYLASE VALUES RELATED TO SIZE OF PERFORATION OF ULCER*

Amylase Values		Total Count	1-3 cm.	3-5 cm.	5-7 cm.	7-10 mm.	1-2 cm.	Over 2 cm.
Normal	0	493	106	77	19	27	15	6
100 - 200	1	186	54	25	7	10	11	3
200 - 300	2	47	9	7	2	3	3	1
300 - 400	3	39	10	7	1	1	2	1
400 - 600	4	13	2	2	1	2	2	1
Over 600	5	12		1		1	1	2
Total		790	181	119	30	44	34	14

*When the data in Table 5 are matched against another column of data on the size of the perforation, this type of tabulation is returned.

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CHEST PAIN HYPERTENSION — KURODA

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Abstracts and Briefs

USES OF TRACHEOTOMY

Doctors Allen and Blase of Cincinnati, have presented a concise summary of the uses of tracheotomy in poliomyelitis and other diseases affecting the respiratory tract.

They point out that the information and experience gained in treating poliomyelitis can be applied to patients with chronic lung disease, respiratory failure on any basis, Guillain-Barre syndrome and many other conditions in which the physical findings meet the established criteria.

In the conscious patient the determination of vital capacity can often be used to advantage. In such cases if the vital capacity is found to be 30%, or lower, tracheotomy is definitely indicated. In most cases clinical findings rather than laboratory determinations are used in making the decision. It is pointed out that in any case of severe disease of the respiratory tract where a tracheotomy is considered it is better to do it early rather than late. The authors then give some very useful information as to the care of the tracheotomy and as to the use of humidity, mucolytic agents and oxygen.

Tracheotomy is a proved and established clinical aid in treating many diseases involving the respiratory tract directly or indirectly. Indications must be present and proper technique must be followed for best results.

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Allen, J. E., and Blase, C. S.: Tracheotomy in Poliomyelitis, A. M. A. Arch. Otolaryng. 59:571 (May) 1954.

INDICATIONS FOR SPLENECTOMY

Splenectomy improves virtually all patients with congenital spherocytic hemolytic anemia. The operation fails if accessory spleens are not removed or if the diagnosis was wrong. Postoperatively patients feel subjective improvement, children grow normally, icterus subsides, cardiac abnormalities disappear, ulcers on the extremities heal, hemoglobin concentration and erythrocyte count become normal, reticulocytosis subsides, urobilinogen excretion decreases, thrombocytopenia is temporarily replaced by thrombocytosis, but the platelet count returns to normal some weeks after the anemia has corrected itself.

The cause of congenital spherocytosis is an intrinsic defect in the phosphorus and carbohydrate metabolism of the erythrocytes; this defect persists after splenectomy. The operation cures the patient clinically, because the organ primarily responsible for destruction of the red cells has been removed.

Atypical non-spherocytic hereditary hemolytic anemias do not respond to splenectomy. The clinical manifestations, reticulocytosis, and increased urobilinogen excretion are identical in spherocytic and non-spherocytic congenital hemolytic anemias. The two diseases can be differentiated most readily by the morphology of the red cells.

Determination of the Price-Jones curve is especially useful: In spherocytic anemia the peak of the curve is displaced to the left, because the diameter of the spherocytes is less than the diameter of normal red cells.

In acquired hemolytic anemias the red cells themselves are normal; they are damaged by substances present in the plasma. This can be demonstrated by transfusion studies: Erythrocytes of patients with acquired hemolytic anemia transfused into normal persons have a normal survival time; but normal red cells of normal persons transfused into patients with acquired hemolytic anemia have a shortened survival time. The Coombs test reveals erythrocyte antibodies in the plasma of patients with acquired hemolytic anemia.

Administration of adrenal cortical steroids is the preferred treatment for acquired hemolytic anemias; splenectomy should be resorted to only if a medical regimen fails.

Remissions following splenectomy occur in about 50% of the patients, but they are often only temporary. Patients whose blood contains cold agglutinins or cold hemolysins should not be operated.

Splenectomy was thought to be contrainidicated in aplastic anemias, until some patients were improved by the operation. It is useless when the bone marrow has been replaced by metastatic carcinoma, leukemic infiltrates, or multiple myeloma.

Patients in whom the lifespan of the erythrocytes is shortened tend to benefit from splenectomy; their need for transfusions may not be abolished, but it will be decreased postoperatively.

Improvement in the lifespan of the erythrocytes is usually accompanied by improvement of the leukopenia and pancytopenia. Nevertheless, before splenectomy is seriously contemplated in patients with aplastic anemia, they should be given a therapeutic trial with adrenal cortical steriods.

This review of the indications for splenectomy in selected anemias represents the opinions of a well known hematologist and internist. In recent years, enzymology, immunology, and radioactive isotopes have contributed much to the understanding of anemias. The author discusses established facts as well as some challenging hypotheses.

Henry S. Bloch, M. D., Ph. D.
Minneapolis, Minnesota

Heilmeyer, L.: Hematologic Indications For Splenectomy and Their Rationale. Munchen, med. Wchnschr. 102:117-123, Jan. 15, 1960.

LOCALIZATION OF METALLIC FOREIGN BODIES

The value of the Berman Locator in localization of metallic foreign bodies in the field of otolaryngology is discussed. The author mentions the history of the instrument, pointing out that it was devised shortly before World War I and put into use at the time of Pearl Harbor.

The Berman Locator works on the principle of electromagnetic induction. It is not a magnet for removal of foreign bodies. However, it is much more sensitive for magnetic metals than for the non-magnetic. Instructions with the instrument are very clear and with a little practice before surgery it can be used efficiently the first time. This instrument obviously is not limited in its usefulness to the field of otolaryngology. It can well be used in search for metallic foreign bodies in any part of the body.

The reviewer has used the Berman Locator in localization of metallic foreign bodies in the neck and in the oral cavity and pharynx. I agree with the writers of the article on all points. Whenever such an instrument is available, I think it should be used in the search for metallic bodies since it reduces the amount of surgical trauma.

R. J. Richardson, M. D.
Minneapolis, Minnesota

Moorhead, J. J.: Metallic Foreign Bodies and the Electromagnetic Locator, Am. J. Surg. 65:306-317 (Sept.) 1945.

VALUE OF ENZYMES IN DEBRIDEMENT

Relatively new enzymatic agents have found useful application in the field of chemical debridement. At times, in post-operative patients, or in those with tracheostomy, therapeutic measures such as steam, iodides, expectorants, wetting agents or detergents, mechanical suctioning, and even bronchoscopy can prove inadequate in securing a completely clean airway.

Rather spectacular results have been obtained in the use of pancreatic deoxyribonuclease, or pancreatic dornase, which has the ability to liquify thick or tenacious bronchial secretions, thus enabling the patient to raise them with more ease, even to the extent of raising large plugs or bronchial casts.

In the past few years the authors have utilized pancreatic dornase in over 300 patients. Other enzymes employed topically such as trypsin, chymotrypsin, and streptokinase—streptodornase, have proved too irritating and productive of local and general adverse reactions. Pancreatic dornase has no serious side effects, even on prolonged usage.

Illustrative cases are described to depict the use of pancreatic dornase. Suggested applications are for postoperative atelectasis, tracheitis sicca, and chronic pulmonary diseases such as asthma, chronic pneumonitis, lung abscess, and bronchiectasis. The enzyme was also studied in connection with diagnostic bronchoscopy. It is the authors' impression that a higher yield of cytologically positive bronchial washings may be obtained by this method.

Pancreatic dornase, utilized according to the technics described, would appear to be a safe and practical adjunct, useful in the management of the vexing pulmonary disorders associated with obstructing secretions.

Robert N. Hammerstrom, M. D.
Minneapolis, Minnesota

VAGOTOMY IN DUODENAL ULCER

The author reports use of vagotomy since 1946 with ploroplasty as his treatment of choice for duodenal ulcer. Two hundred fifty-six patients had been treated, including one hundred who had significant bleeding shortly prior to operation.

The bed of the ulcer was cross-sewn whenever necessary in cases of active bleeding at surgery or in cases with a doubtful clot. No surgical deaths occurred in 100 bleeding cases and a satisfactory result classified for 93% with an average follow-up time of slightly over five years. The ulcer was cross-sewn in 47 of the 100 patients although only 14 demonstrated active bleeding at the time of laparotomy.

The author states that dysphagia and dumping were transient and mild in three patients for each symptom. Of 53 mild to moderate bleeders, there were 9.4% recurrence and two are related to incomplete vagotomy.

Of 39 patients with exsanguinating hemorrhage, there was a 2.6% recurrence, the average recurrence rate being 6.5%, the highest rate being in a group of elective patients who were admitted as emergencies but after shock was corrected, bleeding had stopped. Of 32 patients in this category, there was a 14% recurrence of bleeding.

The procedure of vagotomy pyloroplasty has no doubt achieved a definite place in the treatment of duodenal ulcer since it appears to decrease the dysphagia and dumping problem. However, the problem of recurrence is not definitely settled. The usual difficulty in most operator's hands of getting 100% full vagotomy has been noted in a few in this series and, although an average of five-year follow-ups has been described, there is no indication from the paper as to the number of cases followed less than five years in order to establish this average. For five year cure rates, more positive information would no doubt be obtained by elimination of all cases less than five years, a 14% recurrence of bleeding rate in the elective bleeders would seem to be unduly high particularly when the recurrence rate is that of the problem of bleeding only and does not indicate other ulcer difficulties.

J. H. Strickler, M.D.
Minneapolis, Minnesota

Vagotomy Pyloroplasty and Suture — A Safe and Effective Remedy for the Duodenal Ulcer that Bleeds: A Progress Report on 100 Consecutive Cases, Howard E. Dorton, M. D., Lexington, Kentucky. Annals of Surgery 153:378, March 1961.

CANCER-SMOKING LEGAL DECISION

At least one group of people, a jury in Miami, Florida, has set a definite answer to the smoking-lung cancer question. A recent suit there, against a tobacco company by the estate of a man dead of lung cancer, absolved the company after a two week trial involving scores of experts both pro and con. Anti-smoking scientists, however, were heartened by the fact that the verdict related only to the state of knowledge in 1956, plan further contests.

The whole life of man is but a point of time; let us enjoy it, therefore, while it lasts, and not spend it to no purpose.—*Plutarch*

Book Reviews

THE FOOT AND ANKLE, THEIR INJURIES, DISEASES, DEFORMITIES AND DISABILITIES—Philip Lewin, M.D., Fourth Edition. Lee and Febiger, Philadelphia, 1959.

Doctor Lewin has added a great deal of up-to-date material to the fourth edition of his excellent book on the foot and ankle. More modern methods of treatment have replaced outmoded methods. On the whole, the changing concepts are demonstrated by the many new sections added to this edition.

The treatment of crushing injuries, compound fractures and amputations has been dealt with at great length and with considerable skill, in this edition. The book is a splendid book for the general surgeon, orthopedic surgeon and the general practitioner. It is filled with excellent ideas, practical diagnostic and therapeutic aids.

I would recommend this as an excellent addition to any doctor's library.

Frederick M. Owens, Jr., M. D.
St. Paul, Minnesota

AN ATLAS OF PAIN PATTERNS—L. A. Smith, et al—Charles C. Thomas, Publisher, 1961.

This is an excellently designed monograph dealing with the pain pattern of five different abdominal diseases: hiatus hernia, gastric ulcer, duodenal ulcer, gall bladder disease and pancreatic lesions.

A schematic diagram of the splanchnic and cerebro-spinal pathways is illustrated. Topographical drawings of the abdomen and chest illustrate the directions of radiating pain. These are accompanied by colored drawings of the pathologic lesions. This monograph is a delight to review and instructive in its simplicity. This book should be an asset to any physician who wishes to enjoy an evening reviewing the pain patterns from the abdomen or as a readily available desk reference when an abdominal pain pattern presents itself in clinical practice.

Carl O. Rice, M. D.
Minneapolis, Minnesota

SECOND GROWTH, THE SAGA OF A NEW BOY IN TOWN"—Carlos W. del Plaine, C. E., M. D. Exposition Press, Inc., New York, 1961; 143 pages.

In this book Doctor del Plaine, a well known retired physician and surgeon of Minneapolis, has written a delightful novel dealing with his life between the ages of 10 and 20. Starting with the great adjustment required when he moved from his first home in Mexico (see his SON OF ORIZABA) to Nova Scotia after his mother's tragic death, he describes perceptively the narrow world of the bleak hamlet where he lived. His keen remembrance, coupled with an effective style, brings us poignantly the bitter prejudices he faced, the difficult transition from hot Mexican food to "tasteless" Canadian beans and salt pork (which he had been taught to abhor), and the cruel and needless blow of being expelled from school just before graduation.

He portrays clearly the genesis of his long deferred medical career. Selling dressed wild rabbits, in the process he studied anatomy. Working in a drug store, he filled prescriptions without formal training. Living through a typhoid epidemic, he spent long hours caring for the victims, and he tells of his own remarkable bout with the disease, from which he recovered alone in the woods.

Although told by a doctor that he would someday be a physician, the story of his youth nevertheless ends with his teaching school and studying in a Normal School. Reading his keen accounts of the natural world and of the people with whom he lived and worked, one can only hope that there will be another volume dealing with his later, varied, and interesting years.

Perry M. Gilgillan

MIRAGE OF HEALTH—Rene Dubos—Anchor Books—Garden City, New York, Doubleday and Company, Inc., 1961.

Utopias of men have never been able to keep pace with their fundamental desire for change and new conquests. Chinese Taoists found their utopia completely surrounding them, for their way of life involved the merging of themselves with their environment. Therefore, joy and bliss, health and happiness, were achieved even in the primitive existence of the remote village fishermen. Present day man dreams of a utopia but Rene Dubos does not foresee that this can be achieved.

He sees man reigning at the top of the vast order of living creatures, but man acts contrary to other creatures in that he is learning to control nature so that it adapts to him, whereas other creatures survive only through their own physical and instinctive adaptations to nature.

Man does not have to worry about falling prey to any other species of living creature. Food for him exists everywhere. Biologically, he appears to dominate all living things—but with one exception: Microorganisms which, on the one hand, can be his helper in the fertilization of soil, on the other hand can be man's worst enemy because of their relatively undisciplined ways and widespread disease production.

Through centuries of attempts to control human destiny, man has been confronted repeatedly by unforeseen obstacles not the least of which has been the microbial world. Man desires health and happiness, yet he also desires to bring about adaptation on the part of the world about him. This involves struggles. Doctor Dubos interprets clearly man's biggest and most relentless struggle against the one force of nature—microbes—which are equally unrelenting in its counterattack on him!

Jeanne M. Scanlon, R. N.
St. Barnabas Hospital School of Nursing
Minneapolis, Minnesota

CHILDBIRTH WITH HYPNOSIS—William S. Kroger, M. D.—Doubleday & Company, 1961.

The reviewer of the book, CHILDBIRTH WITH HYPNOSIS, by Doctor William S. Kroger has had enough experience in the use of hypnosis as an adjunctive technic in obstetrics in the last fifteen years to be able to present an objective appraisal of Doctor Kroger's work.

This volume was written primarily for the use of the obstetrical patient—an effort to answer all of her questions so far as this technic is concerned. Doctor Kroger has done a noteworthy job in this respect. The book is written very simply and is easily understood—there is no effort made to oversell the technic and it is not held up as a panacea. He has tried to take all the "mystery" from the subject and inform the patient what to expect from her physician when she does use this technic. Doctor Kroger clears up a number of controversial points—he points out that the relaxation learned as a part of the hypnotic technic is of prime importance, that the hypnotic subject is not deprived of analgesia—in fact, that hypnosis plus local infiltration is a "near-perfect prescription for painless childbirth."

His definition of hypnosis is most descriptive. "It is a favorable mental attitude or mind set based on a blending of belief, faith, confidence, and expectancy, all fused through the imagination of the subject to produce increased susceptibility to suggestion." Aside from answering the usual questions that are asked by patients, Doctor Kroger also discusses the use of hypnosis in a number of other pregnancy complaints.

The book is highly recommended, not only for the enlightenment of the obstetrical patient but also, for the information of the physician.

Milton Abrahamson, M. D.
Minneapolis, Minnesota

CURRENT THERAPY—Howard F. Conn, M. D.—W. B. Saunders Company, Philadelphia & London, 1961. pp. 806. $12.50

The 13th annual edition of this well known compendium of "Latest Approved Methods of Treatment for the Practicing Physician" has retained the style and format of previous editions as well as its broad usefulness. Most of the sections have been rewritten by new contributors. This does not mean that previous editions are antiquated. Comparison reveals the change or lack of change in the management of disease entities which has occurred in recent years, and agreements and disagreements of experts which are not readily available from other sources. Obviously, the art and science of medicine does not grow in an even fashion. In several instances the authors seem to have "let down their hair" in speaking their mind on issues dear to their heart. In this sense some of the chapters give the impression of being dogmatic rather than objective and authoritative but they make interesting reading nevertheless.

To keep informed of current thinking in various fields of medicine has been and is an ever present challenge. This book should be helpful in keeping the reader abreast perhaps not so much in his own field of endeavour, in which he is already expert, but on therapeutic problems with which he may have only occasional contact. Progress in medicine should not be gaged solely by the advances made by single men or institutions, but by the capacity of the medical community as a whole to deal with problems as they arise from day to day. Current Therapy is designed to improve this capacity. It should not be regarded a substitute for more detailed discussions concerning management of various diseases available elsewhere. But on many occasions it will prove useful to those who desire a concise expose of a specific subject.

Henry S. Bloch, M. D., Ph. D.
Minneapolis, Minnesota

SURGICAL TREATMENT OF INTRA-CRANIAL MENINGIOMAS—Collin MacCarty, M. D.—Charles C. Thomas, Publisher, 1961.

This monograph covers the surgical aspect of treatment of various types of intra-cranial meningiomas. It is obviously not intended for the general field of medicine but rather, as Doctor MacCarty states in the dedication, "for the past and present fellows in neurologic surgery at the Mayo Clinic." The drawings showing various incisions and the placing of bone flaps are excellent and are highly recommended for any neurosurgeon. Of particular interest to the surgeon is Doctor MacCarty's advocacy of free bone flaps and dural flaps in treating this type of tumor. To this I would heartily agree. Another point Doctor MacCarty makes, and which is not common knowledge to the medical profession, is that not all meningiomas can be successfully treated because of the location of the tumor and their relation to structures which cannot be sacrificed. This monograph is highly recommended for all neurosurgeons.

David R. Johnson, M. D.
Minneapolis, Minnesota

NERVE ENDINGS IN NORMAL AND PATHOLOGIC SKIN; CONTRIBUTIONS TO THE ANATOMY OF SENSATION—R. K. Winkelmann, M. D., Ph. D., Mayo Clinic. Springfield, Charles C. Thomas, 1960. 195 p. Illus. Price $7.50.

In this book Doctor Winkelmann presents a very complete treatise on the anatomy of the nerve networks in the skin.

The methods and technics in the preparation and staining of the skin for the studying of the nerve tissue is outlined in complete detail.

The different layers of the skin, the different structures and appendages in the skin, and the nerve networks in special regions of the skin are dealt with in separate chapters, e. g. dermal nerve networks, hair-follicle nerve networks, innervation of nails, digits, mucocutaneous regions, etc. A very complete chapter on the autonomic nervous system in the skin describes in detail the innervation of the cutaneous vessels, sweat glands, sebaceous glands, hair-follicle, etc.

The different nerve end organs are detailed in separate chapters, e. g. the mucocutaneous end organ, the Meissner corpuscle, the Vater-Pacini corpuscle, and specialized nerve endings. Comparative neuroanatomy of the skin of lower mammals is also presented.

As a clinician the chapter on nerves in cutaneous disease was of the greatest interest to me. Also brought out is not only peripheral nerve changes in disease, but also central nervous system disease and its relationship to skin changes.

This book should be a required reference for all those anatomists, neurologists, dermatologists and physiologists who are interested in problems dealing with the basic nerve structures in the skin. This book is well written, well organized, and very informative; and it has a very complete bibliography.

Harold G. Ravits, M. D.
St. Paul, Minnesota

We Are Proud To Announce

The Board of Editors of the Minnesota State Medical Association is proud to announce its sponsorship of an annual lecture to assist physicians in the art and techniques of "Medical Manuscript Preparation."

James P. Gray, M. D., visiting lecturer on medical writing for the Education Committee of the American Medical Writers' Association, will present the 1961 lecture entitled "Communications in Medicine: In Writing" Thursday, October 26, in the Mayo Auditorium at the University of Minnesota Medical School.

This year's lecture, being co-sponsored by the University of Minnesota Medical School, will be presented to a student audience in the afternoon and at 8 p. m. in the evening for all interested doctors.

The purpose of the Board of Editors in sponsoring this annual lecture is to perpetuate and improve the intra-professional exchange of medical scientific information. It is our firm belief that it is our responsibility to assist both medical students and our profession in gaining the skills necessary for the preparation of manuscripts for the sharing of scientific information. It is our hope that these lectures will arouse the interest and encourage the physician to improve his ability to communicate with others . . . physicians and patients . . . through writing.

This year's lecturer, Dr. Gray, has been the visiting lecturer for the American Medical Writers' Association since 1957.

At this year's lecture, a booklet "A Group of Papers on Medical Writing" will be distributed to all attending.

Board of Editors

President's Letter

PUBLIC RELATIONS — FRONT AND CENTER

"I like you, Dr. John Doe, as my doctor, but I do not like your national organization, the A.M.A."

How many times have you read or heard this statement lately? Here is the key to better understanding. We should tell our patients emphatically that the doctors they like, respect, and consult, individually, make up the A.M.A. collectively.

I cannot go along with the impression that that respect for the doctors is at an all-time low. I feel that publicity to that effect is generated by those who for various reasons wished to make it appear so for their own special reasons and purposes.

The conscientious doctor placed in the public eye is unfamiliar with the spot-light of critical review which is often distorted. He is unduly sensitive to this criticism, and does not quite undertsand what it is all about. His patients continue to be loyal to him. He is thus unprepared for his defense.

I would like to cite one of these examples of unjustified criticism. Following Dr. Leonard W. Larson's address to the House of Delegates at the recent American Medical Association meeting, in which he emphasized that we can and must discipline our recalcitrants, the newspaper headlines said in essence, "Doctors told to cease padding their bills." The inference was that we all do.

Why is our public image now being both defended and depreciated? I believe we all agree that the doctor of the past generations has been sentimentally viewed as a prime example of good public relations. Much of the success of his practice depended on it. It was one of the most important tools of his armamentarium.

The doctor of a generation or so ago was accepted as the exemplification of the perfect physician-patient relationship. The defense of his skill, actions, and conduct was easily generated among his patients. He may have acquired the first car in town, but he was not classified as a Cadillac Doctor. It was a necessity then, not an unjustifiable luxury.

Why this concerted effort to emphasize Public Relations? Has medical public relations really reached an all-time low? I feel we are unjustly criticized, and briefly here is my case in point.

There has been a transition in our work philosophy. In the past, labor had few privileges, but negotiation and demands have given them freedom and fringe benefits never thought possible. These added rewards were not only of a monetary nature, they also included increased leisure.

Now it is difficult for the lay public to grant the same privileges to the medical men of this generation. He should not have these fringe benefits of afternoons off or free week-ends. He must be neglecting his patients if he is seen with a fish pole or golf club in his hand. He must be over-charging his patients when the house he lives in has a two car garage. The present generation of doctors is trying to enjoy some of the fringe benefits their patients enjoy. This new freedom has put them in the critical public eye.

Another factor has been the necessity for increased participation in the socio-economic-political fields. Here he is again exposed to public view, and the public is critical, if his views are not theirs.

Improved scientific procedures have made it possible for medical men to find time to do these extra-curricular things. They are not neglecting their patients in so doing. They have become citizens as well as healers. Their emergence as citizens is not based on the selfish purpose to defend their professional way of life, as the critics would have you believe. The new role which the doctor is assuming is prompted by the desire to defend one of the last vestiges of the American Way of Life.

As the number of public contacts increase chances for critical review become greater. I do not feel our public relations are at a low ebb. They are being viewed by different standards. The patient emotionally envisions the doctor of the little black bag days. He neglects to evaluate the changes in medical practice that modern science has created. Indeed medical public relations would be low, if the doctor retained the image of the doctor with the little black bag and what it represented and refused to keep up with the modern advances.

As improved mechanization in industry and the changing philosophy in labor relations have made for more freedoms among our lay public, similarly and paradoxically, our modern scientific advances in medicine have done the same for our doctors. The emerging image of the doctor with more time for himself and family is replacing the image of the past. It is hard for the public to accept the former.

The Public Health Education Committee of the Minnesota State Medical Association will sponsor a one-day Public Relations Institute, Saturday, October 14th at the Hotel Leamington, Minneapolis. The purpose of the meeting is to help our members to project the changing image of the physician to all his public. Each county medical society is urged to name a public relations chairman to attend this important meeting. At this meeting he will be told of the public relations tools available to him and his Society. He will also learn how to use these tools more effectively to tell his story to the press and radio as well as his patients.

These various facets of public relations will be presented by professional and lay individuals, skilled in their respective fields. The response in attendance at this institute will help to restore faith in the true picture of the physician, and aid our profession in presenting that image to the public. The true image is there. It has not been lost, however, it may have been neglected. It is changing with our changing times.

Let us guide that change by giving our membership increased knowledge in the methods to improve our image. It is our best means to combat the alarming distortion of that image, as presented by various pressure groups whose distortion infers that our Public Relations are at an all-time low. Do you agree to that statement? Be sure that your society is represented at this Institute.

C. L. Oppegaard

President Minnesota State Medical Association

Editorials

NOMENCLATURE AND DIAGNOSIS IN CORONARY DISEASES. THE ROLE OF EFFORT.

I. Angina Pectoris

Of the ischemic episodes that affect the coronary arteries, angina pectoris represents the mildest, as well as the most common. For a clear understanding of these occurrences, it is necessary to identify the mechanism of each which, in turn will lead to the use of specific descriptive terminology.

The manifestation of coronary artery disease known as angina pectoris, or simply angina, represents a temporary insufficiency of the coronary blood flow with subendocardial ischemia. It sometimes has been suggested that the term "angina pectoris" be discarded in favor of "transitory coronary insufficiency." While this would be justified theoretically, the classical syndrome that includes substernal pain and its radiation, its relation to effort, excitement, cold and excesses in eating, and its relief by nitroglycerin is characteristic and so well established that it seems advantageous to retain the designation "angina pectoris" to connote this type of coronary insufficiency. "Anginal syndrome" and "coronary pain" constitute acceptable synonyms.

Coronary or anginal pain varies greatly in character and severity. A patient may have difficulty in describing his discomfort and may not refer to it as "pain." Typically, it is a short and recurrent pain or pressure sensation in the substernum, often radiating to the shoulder or arm, and occasionally felt in the jaw. The patient is likely to be apprehensive, grow pale and to perspire.

An attack of angina pectoris is precipitated by some definite factor. Exertion causes the attack in 90 per cent of the instances. Emotional crises, such as excitement, constitute another prominent cause. Exposure to cold, overindulgence in food, alcohol, or tobacco, acute infectious states, tachycardia, hypertensive or hyperthyroid crises, and drugs like epinephrine are others. The precipating factors, in general, lead to increased work by the heart, a diminution in coronary blood flow, or impaired oxygenation of the blood.

The relation of the chest pain, pressure or discomfort to exertion has become almost a *sine qua non* of angina pectoris. With cessation of the effort, the symptom disappears. If exertion continues, the pain will grow worse and become severe enough to force cessation of the effort; an episode of acute coronary insufficiency without occlusion may be induced and the patient may collapse.

The combination of exertion and meals, or excitement, or cold proverbially initiate the symptoms of coronary disease. In shoveling snow, it is physical effort and cold; in sexual intercourse, it is effort and excitement.

Often a repetition of the effort under the same circumstances will produce chest symptoms at one time and not at another. Thus, a man may experience symptoms only when he begins to shave, when he leaves the house in the morning, when he arrives at the first hole for his game of golf, or when he walks after dinner. This very activity, this specific force or work may be the only physical activity and the only time at which the chest complaint occurs. A conditioned reflex is present.

The coronary arteries of a patient with angina pectoris most likely will be narrowed by arteriosclerosis or the patient may have coronary ostial stenosis or valvular heart disease. Pulmonary hypertension, anemia and hypo- or hyperthyroidism may predispose to the occurrence of angina. Males aged 30 to 70 years are the most susceptible to attacks.

Angina pectoris differs from the more severe forms of coronary insufficiency in that no anatomic alterations occur in the cardiac muscle. This pain can be relieved by nitroglycerin. Shock is not present; the heart sounds and blood pressure are not altered significantly; and a pericardial rub and heart failure do not appear. Fever, leukocytosis and an elevation in sedimentation rate are absent. When an attack subsides, the patient returns to his previous condition and may feel as well as before.

Only transitory changes may occur in the electrocardiogram consisting of RS-T depression and T-wave abnormalities. These changes would be indicative of coronary insufficiency. Q-waves are absent. When no changes appear in the electrocardiogram while the patient is at rest, it may become necessary to use the Master two-step exercise test in order to establish the diagnosis. The test has proven to be of value in early detection of latent coronary insufficiency, when used in conjunction with the history and physical examination. In the test, the electrocardiogram is recorded again immediately following exercise. Lead II and precordial leads V_2 to V_6 are the most sensitive indicators of any change due to exercise.

Chest pain must be distinguished from psychogenic causes, arthritis, neuritis, fibrositis, myositis, hiatus hernia, chronic pulmonary disease, peptic ulcer and gallbladder disease. Pain in the the chest occurs from cardiac causes when it 1) is induced by effort, 2) is located beneath the sternum, 3) has an oppressive or constricting characteristic, 4) radiates to the left shoulder or arm, 5) lasts a short time, and 6) is relieved by nitroglycerin. In contrast, chest pain that 1) occurs at rest, 2) is not located in the substernal area, 3) has an aching quality, 4) does not radiate, 5) lasts for a long time, and 6) does not yield to nitroglycerin, is not caused by conditions related to the heart. No one of these characteristics suffices to make a distinction, but with the presence of three or more of either group, the diagnosis becomes certain.

Nitroglycerin affords the best prophylaxis for the attacks of angina pectoris. It should consist of the amount that will relieve pain without causing headache.

The patient subject to angina pectoris needs to lead a sensible life with avoidance of mental, emotional and physical stress. He will fare best by maintaining calmness in his talking and activities. Rushing about, lifting heavy objects, and experiencing emotional upsets and frustrations can prove his undoing. Reducing weight when a person is obese is a requisite to satisfactory management.

The avoidance of the specific application of physical force that produces the pressure is of great value. Thus, a slower walk, a smaller meal, a shave without haste, the avoidance of straining at stool, and the use of nitroglycerin just before the physical endeavor is about to take place are important therapeutic measures.

If a patient cooperates with the measures outlined for him, his prognosis in all probability will be good. Nitroglycerin will prove repeatedly effective. However, because of basic changes in the coronary arteries, angina pectoris will not be cured by any of the measures suggested and may persist for years.

II. Acute Coronary Insufficiency Without Occlusion

The most severe ischemic episode affecting the coronary arteries and the myocardium, after angina pectoris, is acute coronary insufficiency without occlusion. It actually is a more severe and prolonged episode of angina pectoris. Attacks of acute coronary insufficiency are the most numerous of those affecting the coronary arteries. Probably from two to four million of these attacks occur annually.

The need for subdividing coronary disease used to be questioned because, in a broad sense, all coronary disease is "coronary insufficiency." Some held that no distinction could be made clinically between coronary insufficiency with its subendocardial necrosis or infarction of the heart muscle and coronary occlusion with through and through infarction. Their differentiation by clinical and electrocardiographic characteristics has proved this view erroneous. The concept of a stage midway between "angina" and "occlusion" has also become established through a lack of evidence of occlusion in fatal cases of acute coronary disease. On the practical side, the concept should be accepted because coronary insufficiency without occlusion is very often preventable and often can be cured. This is not true of coronary occlusion.

"Coronary insufficiency" once was used to designate all coronary episodes and among them coronary "thrombosis." "Myocardial infarction" has also been a catch-all term used whenever there existed evidence of necrosis or infarction regardless of whether or not coronary occlusion was present. The lumping of cases under such designations not only is incorrect but it precludes the selection of appropriate therapy.

Coronary insufficiency without occlusion is most likely to occur in arteries narrowed by sclerosis, but coronary ostial stenosis, aortic or mitral stenosis, cardiac hypertrophy, severe hypertension, congestive heart failure, chronic anemia, and hypo- and hyperthyroidism also predispose to ischemia of the myocardium.

During a mild attack, subendocardial ischemia will occur but the myocardium will not be altered. When an attack is more prolonged, focal areas of necrosis will be scattered throughout the subendocardium. A very severe attack can cause microscopic confluent necrosis, that is, "subendocardial infarction" in the entire inner shell of the left ventricle.

Although it has been emphasized that very frequently prevention and cure are present, nevertheless the majority of attacks of acute coronary insufficiency without occlusion occur spontaneously with no precipitating cause. These may resemble acute coronary occlusion and an electrocardiogram must be taken before they can be distinguished. Nevertheless, acute coronary insufficiency without occlusion can be induced, as we have reiterated. Conditions that induce it either increase the work of the heart, diminish the flow of blood through the coronary vessels, interfere with oxygenation of the blood, or do more than one of these.

Among those factors that increase the work of the heart, effort produces the most attacks of acute coronary insufficiency without occlusion. This is because the heart load has been increased.

Cases of "sudden death" that occur during work and come to the medical examiner are, for the most part, cases of acute coronary insufficiency without occlusion. Some strain has been placed upon a heart with latent or known coronary insufficiency.

The cases where attacks of acute coronary insufficiency without occlusion occurred due to physical exertion or unusual effort are legion. Take, for illustration, the instance of an electrician with an anginal syndrome who had been cautioned not to carry heavy weights. He collapsed after carrying heavy cables up seven flights of stairs in an uncompleted building where the elevators had not been installed. Another example would be the case of the foreman of a lumber crew who developed pain in his chest while he helped his men, working half a day on a holiday, carry heavy pieces of lumber. An electrocardiogram disclosed RS-T depressions and T-wave changes.

The case of a senior naval medical officer also shows how exertion can precipitate an attack. He worked incessantly during a shake-down cruise of a battleship, climbing steel ladders hour after hour, and inspecting the personnel and material for which he was responsible. As his ship returned to port, he developed severe chest pain. An electrocardiogram showed changes typical of coronary insufficiency without occlusion. The pattern at rest became normal within a few days, but for months, after a two-step exercise test, ischemic RS-T depressions could be seen in the tracings. Here was a man with latent coronary insufficiency who should have avoided undue exertion.

One hears repeatedly of persons suffering a "heart attack," sometimes fatal, while shoveling snow. Without doubt, these are instances of acute coronary insufficiency without occlusion. Narrowed arteries and the strain caused by effort have caused ischemia of the myocardium with subendocardial necrosis. Shoveling snow affords fine exercise for healthy persons but it is dangerous for those with coronary artery disease. The physical effort and the cold temperature place an inordinate strain upon the heart.

Reluctance to reveal the facts of angina pectoris causes the frequency of attacks of acute coronary insufficiency occurring during sexual intercourse to escape attention. Coronary insufficiency here is due to both effort and excitement. Cases have been substantiated electrocardiographically. The deaths of elderly statesmen within 48 hours of marriage to their young secretaries made newspaper headlines a few years ago and were due to this cause.

Effort and excitement of persons engaging in quarrels and fist fights at work also have been responsible for acute coronary insufficiency. The wife of a 54 year old man with an anginal syndrome due to rheumatic aortic insufficiency thought him to be a hypochondriac and quarreled with him. The man was goaded to lose his temper and during his yelling and wild gesticulating, he had an attack of acute coronory insufficiency without occlusion.

Straining at stool is another effort that must be avoided by a person with coronary artery disease.

The best prescription that can be given to a person with coronary artery disease is to try to live a calm, unhurried, peaceful existence devoid of excesses in exertion, emotion, and environmental temperature. While physical activities must be curtailed, the person may walk, climb, play golf, or swim, for example, provided these are done in moderate fashion.

Effort is the most important factor, but tachycardia, hypertensive and hyperthyroid crises, and acute infections also can precipitate acute coronary insufficiency by increasing the work of the heart. Some drugs and excess food, tobacco, or alcohol that have this effect also may be responsible for attacks.

Acute coronary insufficiency without occlusion that is due to *diminished coronary flow* often occurs as a result of shock or hemorrhage such as postoperative shock or gastrointestinal hemorrhage. In fact, acute hemorrhage is an important cause of coronary insufficiency. Surgical procedures, trauma, various hypotensive crises, acute heart failure, and reflex coronary vasoconstriction all diminish the flow of blood through the coronary vessels and thus may precipitate ischemic episodes. Reflex constriction of the coronary arteries may occur in cases of pulmonary embolism, peripheral thrombosis or embolism, such acute abdominal conditions as gastroenteritis and gallbladder disease, exposure to cold, excitement, and excessive consumption of food.

Acute coronary insufficiency without occlusion produced by *diminution of oxygenation* of the blood can occur during the administration of anesthesia or during an operation. This possibility also is present in persons suffering from anemia, pulmonary insufficiency, asphyxia, asthmatic attacks, and pulmonary embolism. It can occur at high altitudes.

The symptoms of acute coronary insufficiency without occlusion will vary with the degree of myocardial ischemia and necrosis. Sometimes there may be no pain, but again, if present, it may be more prolonged than in angina pectoris. It may not be relieved by nitroglycerin. The body temperature may rise slightly. There can be very moderate leukocytosis and a slight elevation in sedimentation rate. The serum glutamic oxalacetic transaminase either will be normal or possibly elevated to 30 or 50 units. The heart sounds and blood pressure will show no change, and there will be no pericardial rub, heart failure, shock, or cardiac arrhythmia except as a precipitating factor.

If the electrocardiogram shows no change, it is likely that subendocardial ischemia and necrosis are mild. In the typical case, however, RS-T depression and T-wave inversion are seen soon after the attack. Their appearance sometimes is delayed. Q-waves do not appear and no reciprocal relation exists between Leads I and III. The changes present may persist for hours, days, or weeks, depending upon the degree of ischemia and the extent of necrosis. Usually they are reversible.

The presence of any of the precipitating factors facilitates making a diagnosis. It is best called "acute coronary insufficiency secondary to hemorrhage" or "secondary to shock." If the attack is spontaneous, the diagnosis can be established by the symptoms and by an electrocardiogram.

The serum glutamic oxalacetic transaminase may give an indication of the diagnosis. The level is never elevated in angina pectoris, always high in coronary occlusion, and normal or only slightly elevated in acute coronary insufficiency.

To judge adequacy of the coronary circulation before or after an attack, the two-step exercise electrocardiogram should be employed providing the resting electrocardiogram is normal.

Because of the possibilities for prevention and cure of acute coronary insufficiency without occlusion, its clinical recognition and differentiation from coronary occlusion are essential for definitive treatment.

ARTHUR M. MASTER, M. D.
New York, New York

A REVALUATION OF THE TERM PHYSICAL EXAMINATION

At John Hopkins when they were agitating and organizing full time professors in Clinical Medicine, Dr. Osler was not in favor of the change. He feared that clinical medicine might get too scientific and there would be less human interest in the patient. This, in a way, has happened — not because of the full time professors but because of a rapid growth of technical and chemical procedures and their emphasis in medicine.

A noted Clinician in a recent paper on the physical examination of the heart called attention to the fact that many physicians today have no confidence in their findings at the bedside. This, to my mind, is a reasonable indictment. Something is being lost or atrophied in the medical personalities of today. The time saving and accuracy of the technical and chemical procedures has made their use more and more a bases to lean on by the individual examiner. Technical and chemical methods are indispensible in medicine but so is the practice of physical examination.

There is nothing that can take the place of the fixation of the "doctor-patient" relation as a thorough physical examination. There is no factor in the development of a medical personality as that of making thorough physical examinations. It is like playing golf. You play your score of accuracies against previous scores. As you grow in efficiency so does your confidence grow. And soon all other types of examinations merely become ancillary. The helpful use of the X-Ray, the electrocardiogram, the biochemical and biophysical tests is obvious. Yet the clinical-impression from inspection, palpation and auscultation are far more important in the judgment and prognosis in a given "case." The use of your eyes, hands and ears never lets you forget that you are dealing with a human being. The fragmentations of the patient's physiology no matter how they may illuminate the problem are not the guiding spirit in your judgment. After all the condition and prognosis of the patient must be in his physical status — and that can be obtained only at the bedside.

Those of you who have been making physical examinations consistently and persistently find there is a physical pleasure in carrying them out. You find there is a spiritual growth (dedication) which cannot be obtained in any other way.

To make a thorough physical examination one must have good health, a good stance, good daylight (when possible); clean hands and a clear conscience.

If you carry out these requisites you can truly quote the Greek Master "In purity and holiness I will pass my life and practice my art."

Henry L. Ulrich, M. D.
Minneapolis, Minnesota

Your opinions are sought as "Letters to the Editor." Any signed letter will be considered if it is beneficial to the medical practice as a whole. The opinions expressed in this section need not represent the opinions or policies of MINNESOTA MEDICINE or the Minnesota State Medical Association.

DEAR EDITORS:

Your editorial emphasizing the value to both staff members and to trainees, of a continuous educational program in the community hospital, goes directly to the core of the problems of graduates and post-graduate medical education.

The hospital that offers "scout work" without a coordinated teaching program soon has no trainees. The staff member who is too busy to give time to teaching passes up the finest part of his own educational program. Listening to lectures and attending conventions will never be equal to the staff level teaching in the practitioner's educational program.

In addition to your emphasis on the values to scientific medicine I should like to emphasize the contribution made by the general practitioner in teaching the *art* of medicine. It is in this category that the family physician is needed on the community staff teaching program. In fact, it is only through the contact of internes with the family physicians on the staff, with living demonstration of the values accruing to both patient and physician, that medicine can hope to attract trainees into family practice where the need for their services lies. Their value in the field of general practice continue to be greater than in any of the specialties.

J. S. DeTar, M. D.
Milan, Michigan

PR

Carl H. Woyke
Editor

DO YOU MAKE YOUR WORDS COUNT?

A recent American Medical Association survey points out that doctors may be facing a crisis in the sixties because they have failed to communicate adequately to all their public.

The survey, conducted by an independent firm, points up doctor communications failures in the following areas:

—Failure to communicate to patients understandingly and understandably about their illnesses.

—Failure to communicate effectively regarding fees and medical costs as they relate to other prices today.

—Failure to communicate effectively on a personal level with patients. This leads to complaints that the doctors are cold, indifferent to people's personal problems both medical and financial; that they don't care about people's feelings, that they make people wait too long.

—Failure to communicate the story on the long-established programs medicine has launched, i. e. to train more doctors, to get these doctors into communities needing them, to police its own ranks.

—Failure to communicate its real public interest in the case of the indigent, aged, the economically stricken.

THE SPOKEN WORD

Telling the story by word of mouth although as old as man is still the most effective means of communicating.

Radio, television and other electronic devises have made it possible for man to be heard around the world as well as over the neighbors back yard fence.

When you speak you communicate. The following suggestions will help you to communicate more effectively.

1. Talk with enthusiasm about your profession and the activities of your County Society at your every opportunity.

2. County Society Officers can also put in a good word for the medical profession. At every meeting, officers may wish to ask "How many people did you tell?"

3. County and State officers should recognize that they have important responsibilities in their respective offices. As leaders one of their first duties is to talk about the medical profession and what it is doing. This includes doctor-patient, social, business, civic, professional and other community relationships.

4. Don't be afraid to talk about your profession to your friends. Feel free to point out to them that medical care in the United States is the best in the world. Be prepared to tell them the reasons.

5. Don't be afraid to use a telephone to:
    A. Call a new member of your county medical society and offer your help.
    B. Encourage him or another member to attend the next county medical society meeting.

6. Keep your officer personnel and switch board operator fully informed about your activities in order that they may do an effective job of answering essential questions to telephone or other inquiries.

7. Accept invitations to speak to community organizations. This includes church groups, luncheon clubs, civic organizations, health panels, discussion groups, symposiums, dramatic skits and other variations of communicating via the spoken word, make the most of it.

8. Be willing to visit with your friends, neighbors, and community organization members at P.T.A. meetings, civic organization meetings and other gatherings.

    Nothing does more to shatter the "untouchable" image.

COMMUNICATIONS VALUE OF A SPEAKER BUREAU

In recent years there has been a growing interest in the authentic health information presented in the simple and understandable manner. County medical societies can assume the leadership in making this information available to the public by establishing a speakers bureau. A speaker bureau can help the county medical society to present health education by giving the true facts about health subjects. The speakers bureau can also serve as an opportunity to give the community service story of the medical profession. A few suggestions in this category include telling the story of medicines aging program, health examination campaigns, immunization and disease detection programs, traffic safety campaigns and awards to citizens for health efforts.

A speakers bureau can also help to inform the public about the dangers or benefits of pending local, state or national legislation. The speakers bureau also provides an excellent opportunity for the public to obtain an insight in this the medical economics of medicine.

How to establish a speakers bureau will be one of the topics to be presented at the Minnesota State Medical Public Relations Institute Saturday, October 14, Hotel Leamington, Minneapolis.

Other subjects to be presented include developing and improving doctor, press, radio and television relationships in your community and learning how to write and place a news story.

County medical societies are urged to appoint a Public Relations Chairman if they have not already done so to attend this workshop intended to help the local societies "communicate" more effectively to all its public.

Minnesota Blue Shield

With the medical profession launching its all-out campaign to preserve the traditional freedoms of the physician and the patient, the Blue Shield plan assumes a role of even greater importance than in the past.

The crucial issue confronting the profession today is, of course, the question of how medical care will be paid for in the future. Will it be through tax fund or through voluntary prepayment plans and health insurance?

The continued growth and expansion of the Blue Shield plan has long been recognized as one of the most effective defenses against socialization of medical care. The success of this plan, which is closely identified with the medical profession, is important for two reasons. First, because it offers a voluntary alternative to the compulsory programs advocated by politicians and social planners, and secondly because it demonstrates that physicians do take a responsible and realistic interest in the medical-economic welfare of their patients.

Dr. Norman A. Welch, speaker of the House of Delegates of the American Medical Association, has said that:

"Blue Shield and the American Medical Association should be considered as almost one in their respective efforts to protect the physician against the attacks of those who seek to enslave it."

On the State level, the medical profession and Blue Shield should also recognize that they are united in a common effort.

Blue Shield has taken a series of progressive steps to meet the challenge of the present time. The Senior Citizen plan, providing low-cost medical-care protection for persons 65 years of age and over, has been available for nearly two years. Ceilings on Plan A and Plan B income limits are being raised to make a larger portion of the population eligible for service benefits. Plan C, which will be introduced in the near future, will make it possible for families with annual incomes up to $7,500 to receive service benefits.

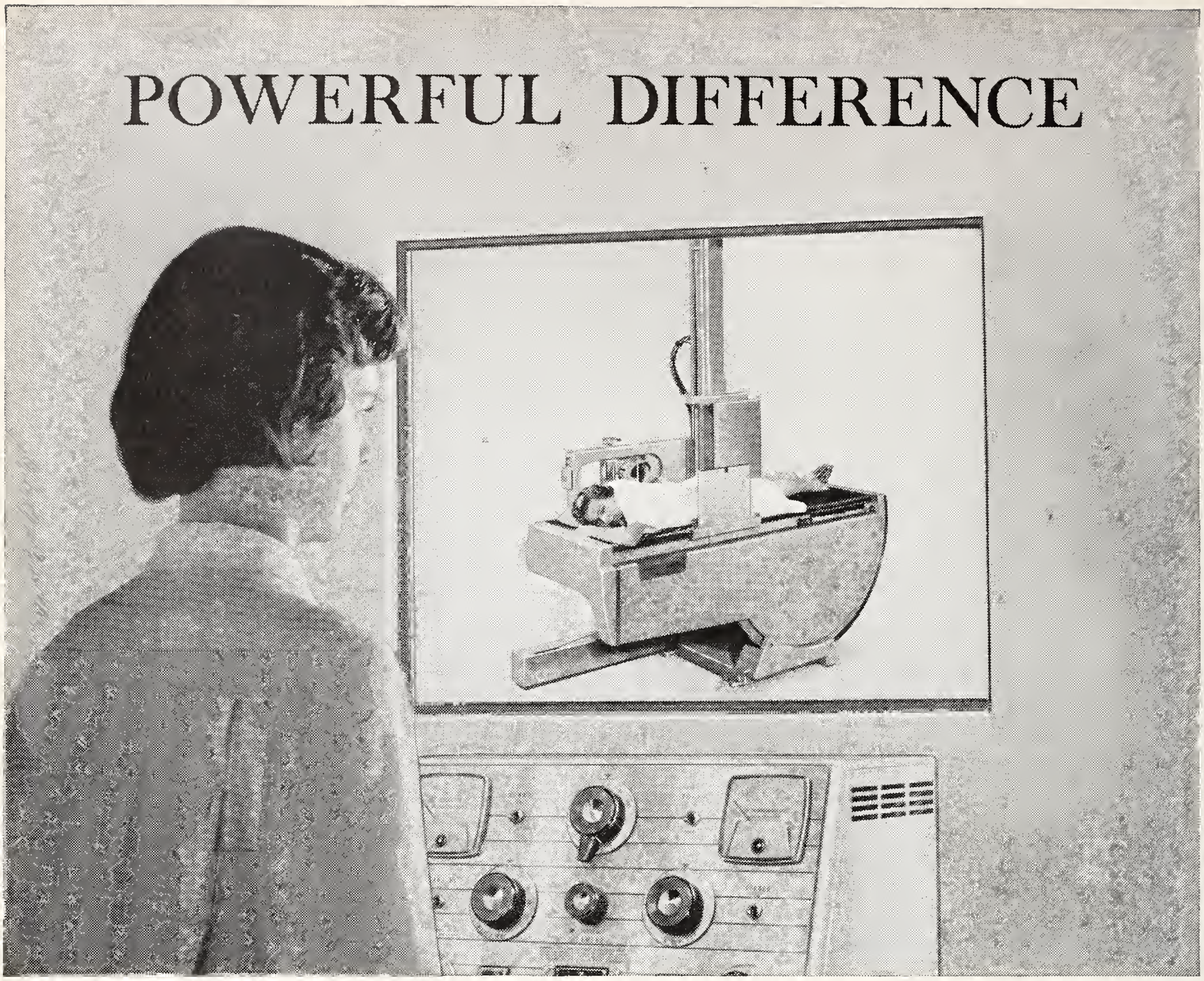
These, among other changes currently taking place, indicate Blue Shield's determination to maintain a program that will strengthen the medical profession's position in opposing Government health care.

However, the interest and support of participating physicians is essential to the success of the Blue Shield plan. In the months ahead, physicians will be called upon to increase their individual efforts in defense of their profession.

The plan of action adopted at the American Medical Association's historic meeting in New York makes this clear.

During this period, it is hoped that participating physicians will make special efforts to recommend the Blue Shield plan to their patients. This is one of the positive ways the physician can combat compulsory, tax-supported health care legislation.

Prepared as a monthly message to participating physicians by Minnesota Blue Shield.



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Meetings and Announcements

SEPTEMBER

American Association of Medical Clinics, Barbizon Plaza Hotel, New York, September 27-29. Dr. Joseph B. Davis, Davis Clinic, 131 N. Washington St., Marion, Indiana, Secretary-Treasurer.

American Association for the Surgery of Trauma, Drake Hotel, Chicago, September 28-30. Dr. William T. Fitts, Jr., 3400 Spruce St., Philadelphia 4, Secretary.

American Society of Clinical Pathologists, Olympic Hotel, Seattle, September 30 - October 8. Miss Eleanor F. Larson, 445 N. Lake Shore Drive, Chicago, Manager.

College of American Pathologists, Seattle, September 30 - October 3. For information write: Dr. A. H. Dearing, Prudential Plaza, Suite 2115, Chicago 1.

Michigan State Medical Society, Grand Rapids, September 24-29. Dr. D. Bruce Wiley, 606 Townsend Street, Lansing, Michigan, Secretary.

The American College of Obstetricians and Gynecologists, September 13-14, Kansas City, Kansas; September 28-30, Atlanta, Georgia. For further information write: Mrs. Ruth Sutton, Information Counsel, 79 West Monroe Street, Chicago 3.

American College of Chest Physicians, Warwick Hotel, Philadelphia, September 25-29. Write: Mr. Murray Kornfield, 112 E. Chestnut Street, Chicago, Executive Director.

Kentucky State Medical Association, Brown Hotel, Louisville, September 19-21. Mr. J. P. Sanford, 1169 Eastern Parkway, Louisville 17, Ky., Executive-Secretary.

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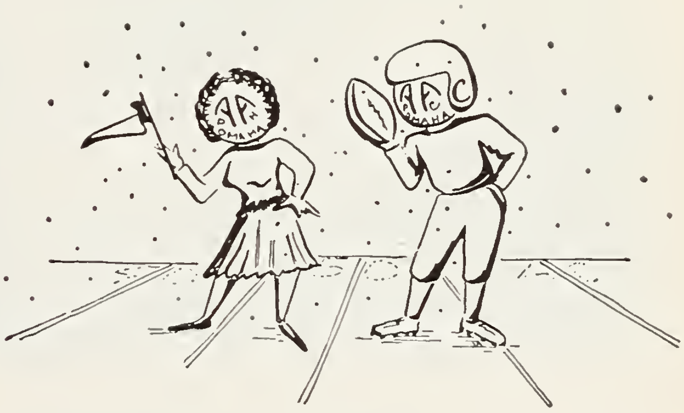

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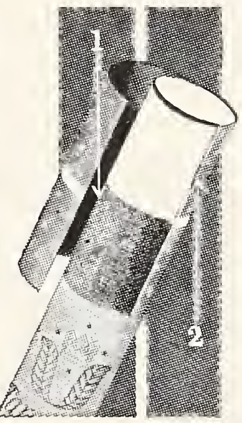

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Southern Minnesota Medical Association and Minnesota Academy of General Practice meet in Austin on September 11. Contact Dr. John J. Eustermann, Mankato.

American Association for Automotive Medicine/Fifth Stapp Automotive Crash and Field Demonstration Conference will be held at the University of Minnesota, September 14 to 16. Contact: Professors James J. Ryan or Merrill K. Kragun of the University of Minnesota.

American College of Physicians presents "Changing Concepts of Cardiopulmonary Diesase" September 18-23 at Ohio State University Health Center. Contact Dr. Edward C. Rosenow, American College of Physicians, 4200 Pine Street, Philadelphia, Pa.

Methodist Hospital, St. Louis Park, will hold a seminar on September 23 entitled "Management of Hypertension." Contact record office at Methodist Hospital, Minneapolis.

The Minnesota Academy of General Practice announces its Eleventh Annual Fall Refresher to be held at Hotel Radison, Minneapolis, September 27-28.

American Fracture Association, Shoreham Hotel, Washington, D. C. Dr. H. W. Wellmering, 610 Griesheim Bldg., Bloomington, Ill., Executive Secretary, Sept. 16 to 23.

OCTOBER

American Academy of Ophthalmology and Otolaryngology, Palmer House, Chicago, October 8-13. Dr. William L. Benedict, 15 Second Street, S. W., Rochester, Minnesota, Executive Secretary.

American Academy of Pediatrics, Palmer House, Chicago, October 2-5. Dr. E. H. Christopherson, 1801 Hinman Avenue, Evanston, Illinois, Executive Director.

Central Association of Obstetricians and Gynecologists, Statler-Hilton Hotel, Cleveland, October 5-7. Dr. Herman L. Gardner, Suite 201, 6436 Fannin St., Houston, Texas, Secretary-Treasurer.

College of American Pathologists, Middle-East Section, Haddon Hall Hotel, Atlantic City, N. J., October 27-28. Dr. Harry H. Stumpf, The Mountainside Hospital, Montclair, N. J., Program Director.

Eastern Psychiatric Research Association, New York City, October 27-28. Dr. David J. Impastato, 40 Fifth Avenue, New York, Secretary-Treasurer.

American Academy of Pediatrics, Palmer House, Chicago, October 2-5. Dr. E. H. Christopherson, 1801 Hinman Ave., Evanston, Ill., Executive Director.

American College of Chest Physicians, Sheraton Towers, Chicago, October 23-27. Write: Mr. Murray Kornfield, 112 E. Chestnut St., Chicago, Executive Director.

American Cancer Society, Biltmore Hotel, New York City, New York, October 23-24. Write: Professional Education Section, American Cancer Society, 521 West 57 Street, New York 19, New York.

The American College of Obstetricians and Gynecologists, October 10-12, Pittsburgh, Pennsylvania; October 26-27. Chicago, Illinois. For further information write: Mrs. Ruth Sutton, Information Counsel, 79 West Monroe Street, Chicago 3.

Thirteenth Postgraduate Assembly In Endocrinology and Metabolism, Bethesda, Maryland, Oct. 2-6. Cosponsored by the Endocrine Society and the National Institute of Health. Write: Dr. Roy Hertz, Building 10, Bethesda 14, Maryland.

American Association of Medical Assistants Convention in Reno, Nevada October 13-15. Contact AMA Headquarters, 510 North Dearborn Street, Chicago.

American Medical Writers' Association, New York City, 6-7, Leslie L. Lewis, LL.B., Ravenswood Hospital, 1931 W. Wilson Avenue, Chicago, Illinois, Asst. Secretary.

American Rhinologic Society Seventh Annual Meeting, Chicago, October 7. Contact: Dr. Robert H. Hansen, 2210 Lloyd Center, Portland 12, Oregon.

Association of American Physicians & Surgeons Annual Meeting October 12, 13, 14 at Ashville, N. D. Contact AAPS, 185 North Wabash Avenue, Chicago.

Blue Shield Annual Program Conference, October 23-24 at Drake Hotel, Chicago. Contact: Lawrence C. Wells, National Association of Blue Shield Plans, Chicago.

Colorado State Medical Society's 21st National Congress on Occupational Health in Denver, October 1-4. Contact Colorado State Medical Society, Denver.

Midwest Regional Group of the Medical Library Association, Rochester, Minnesota, October 27-28. Contact: Thomas E. Keys, Librarian, Mayo Clinic.

Milwaukee Medical Conference sponsored by the Medical Society of Milwaukee County, October 19 and 20 at the Milwaukee County General Hospital. Contact: John C. Kadonsky, Broadway 3-7700, Milwaukee.

New York University Schools of Medicine Tenth Sigmund Pollitzer Lecture October 13, New York University Medical Center, 550 Fifth Avenue, New York City. Contact: Herbert Kadison.

U. S. Civil Defense Council 10th Annual Conference October 16-20 in Los Angeles, Hotel Ambassador. Check with your local or area civil defense director for details.

Western Institute on Epilepsy Annual Conference, San Antonio, Texas, October 11-14. Contact Dr. Lewis M. Helfer, 208 Medical Professional Bldg., San Antonio, Texas.

NOVEMBER

American Medical Association Clinical Meeting, Denver, November 27-30. Dr. F. J. L. Blasingame, 535 N. Dearborn, Chicago 10, Executive Vice President.

American Psychiatric Association, Hotel Schroeder, Milwaukee, Wisconsin, November 16-18. Miss Joan D. McGucken, 756 North, Milwaukee 2, Wisconsin, Administrative Assistant.

Interstate Postgraduate Medical Association, November 13-16, Clevland, Ohio. Write: E. R. Schmidt, M. D., Secretary, Interstate Postgraduate Medical Association, Box 1109, Madison 1, Wisconsin.

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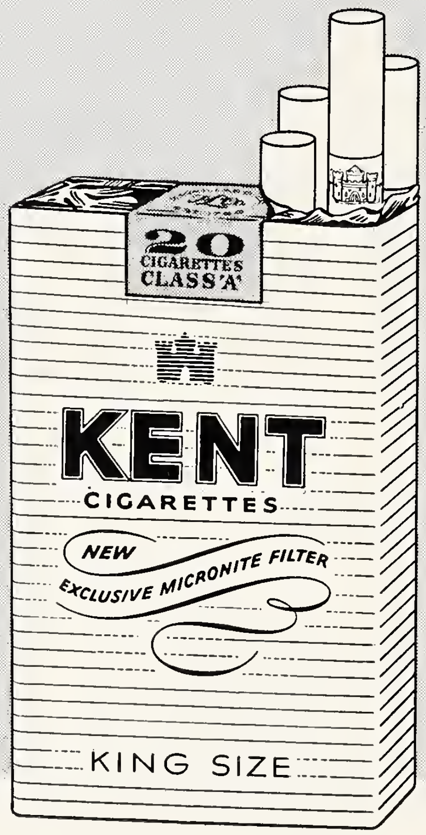

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The American College of Obstetricians and Gynecologists, November 16-18, Louisville, Kentucky. For further information write: Mrs. Ruth Sutton, Information Counsel, 79 West Monroe Street, Chicago 3.

ANNOUNCEMENTS

Next scheduled examination (Part 1) written of American Board of Obstetrics and Gynecology will be held in various cities on Friday, January 5. Current bulletins may be obtained from Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland, Ohio.

Five intensive postgraduate courses patterned for the practitioner are planned for fall and winter at the Medical College of Georgia, Augusta, Georgia. Contact Dr. Claude-Starr Wright, Department of Continuing Education, Medical College of Georgia, Augusta, Georgia.

Courses of particular importance to practicing physicians and surgeons are being offered by Post-Graduate Medical School of New York University Medical Center. Contact: Office of Associate Dean, New York, University Post-Graduate Medical School, 550 Fifth Avenue, New York.

Essays for the medical essay contest, Caleb Fiske Prize of the Rhode Island Medical Society, must be submitted by December 11th, to the Secretary, Fiske Fund, Rhode Island Medical Society, 106 Francis Street, Providence, R. I.

The American College of Gastroenterology announces that its annual course in Postgraduate Gastroenterology will be given at Sheraton-Cleveland in Cleveland, Ohio, October 26, 27, 28.

One complete session will be held at the Cleveland Clinic and at the Cleveland Academy of Medicine. For further information and enrollment write: American College of Gastroenterology, 33 West 60th Street, New York City.

Urology Award — The American Urological Association offers an annual award of $1,000 (first prize of $500, second prize $300, and third prize $200) for essays on the result of some clinical or laboratory research in Urology. For further information write: William P. Didusch, 1120 North Charles Street, Baltimore 1, Maryland. Essays must be in his hands before November 15, 1961.

MINNESOTA Post-Graduate — September 18-21, 1961—

Dr. Lawson Wilkins, Professor and Endocrinologist (Johns Hopkins), will deliver the Annual McQuarrie Lecture, September 20.

Dr. Ralph Platou, Professor (Tulane), will be guest lecturer. He will present difficult diagnostic problems of poisoning. Dr. Edward Press, Chairman of the Academy Committee in Poisoning, will participate in the symposium on poisoning on September 20.

Thyroid physiology and pathology will be discussed by Dr. Robert Blizzard, Chief of Pediatric Endocrinology (Johns Hopkins) and Dr. Alvin B. Hayles (Mayo Clinic) and Dr. T. C. Evans (Iowa University) on September 18.

Chronic Recurrent Infection will be the center of the lectures on September 19. Dr. Harry Ginsburg, Professor of Microbiology (University of Pennsylvania), Dr. Robert Good and Dr. Lewis Wannamaker will be participants in this portion.

Advances in Pediatrics will be the title for September 21.

Round Tables and open discussions will be part of the program each day. For reservations and more detailed information write: The Center for Post-Graduate Education, University of Minnesota, Minneapolis, Minnesota.

Medical Continuation Courses to be presented at the Center for Continuation Study, University of Minnesota, Minneapolis, Minnesota.

September 18-21, Pediatrics for Specialists, October 2-4, Obstetrics for Specialists, October 19-21, Dermatology for Specialists, November 6-10, Radiology for Radiologists (Urologic Radiology) November 15-17, Opthalmology (Refraction for General Physicians November 16-18, Orthopedics for Orthopedic Surgeons (Hand Surgery).

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In Memoriam

ALFRED G. SCHULZE

Dr. Alfred G. Schulze, 84, prominent St. Paul obstetrician and gynecologist, died July 24.

A graduate of the University of Minnesota Medical School, Dr. Schulze served on the Ramsey County welfare board, the state board of medical examiners and the state board of health. He was past president of the Ramsey county medical society, a secretary of the society for ten years and a former treasurer of the Minnesota State Medical Association.

He also was a life member of the American Academy of Obstetricians and Gynecologists and belonged to the Minnesota Academy of Medicine.

Dr. Schulze was an instructor at the university and served on the staffs of St. Luke's, St. Johns, St. Joseph's, Ancker, and Miller hospitals. He was a Mason and an elder of the Macalester Presbyterian church.

Survivors include two daughters, a brother and three grandsons.

THEODORE S. PAULSON

Doctor Theodore S. Paulson, 83, retired Fergus Falls physician and surgeon, died suddenly July 3. He was born in Norway and graduated from Hamline University Medical School.

Doctor Paulson was secretary-treasurer of the Park Region District and County Medical Society for several years, a life member of the Minnesota State Medical Association and became a Fifty Club member in 1959. He served for many years as a member and later president of the Fergus Falls school board.

He is survived by his wife, three sons, Doctors Elmer and Gordon Paulson and a third son, and seven grandchildren.

JOHN DORDAL

Doctor John Dordal, 71, died July 20, following an illness of more than six months. He practiced medicine in Sacred Heart and was a graduate of the University of Minnesota.

Doctor Dordal was a member of the American Medical Association, Minnesota State Medical Association, Renville-Redwood County Medical Society, and served on numerous medical committees. He was a past member of the Board of Education of the Sacred Heart Public Schools; a member of the Sacred Heart Lions Club, the Community Club, and a past commander of the American Legion.

Survivors include his wife and numerous nephews, nieces, grandnephews and grandnieces.

ELIZABETH S. MONAHAN

Doctor Elizabeth S. Monahan, 81, died July 17 following a long illness. She was a graduate of Hamline University Medical School and was on the staff of the Minnesota Public Health Association before she retired.

Doctor Monahan was recognized by the Minnesota State Medical Association in 1958 for fifty years of practice in the state.

She was a charter member of the Minneapolis League of Women Voters and belonged to the Hennepin County Medical Society and the American Association of University Women.

Survivors include two sons, one of whom is Dr. Robert Hugh Monohan, a daughter and five grandchildren.

CLARENCE M. LARSON

Dr. Clarence M. Larson, 61, former chief of the medical staff at Swedish Hospital, died August 14.

Born in Thief River Falls, Dr. Larson, was a resident of the Minneapolis area for 50 years. He graduated from the University of Minnesota school of medicine and was a member of the American Medical Association, American Diabetic Association, the Minnesota State Medical Association, the Hennepin County Medical Society, and a fellow of the American College of Surgeons. He also belonged to the B and P American Legion post, the Masons, the Minneapolis Athletic Club and the Minikahda Club.

Survivors include his wife, three sons, Dr. Donald M. and Dr. Roger C. and Clarence M. Jr., a sister and a brother.

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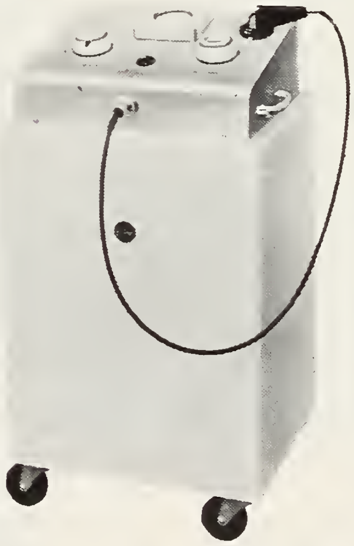

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Physician's Diary

Doctors **Robert C. Goodlin, Erling T. Hauge, Roger C. Larson, Gunard Arvid Nelson, Sheldon C. Reed,** and **Robert M. Wagner,** all of Minneapolis, and **Doctor Leon Kenny McGill** of Virginia and **John S. Welch** of Rochester recently were examined and certified in the specialty of Obstetrics and Gynecology.

* * *

Dr. Laurentius O. Underdahl, assistant professor of medicine at the University of Minnesota, Mayo foundation, was elected secretary of the American Diabetes Association at its 21st Annual Meeting in New York.

* * *

Dr. Thomas W. Votel was recently named Ramsey County Coroner.

* * *

Dr. Peter J. Dyck has been appointed to the staff of the Mayo Clinic as a consultant in neurology.

* * *

Dr. and Mrs. Albert J. Lenarz, St. Cloud, were named winners of the "Weekend for Two" at Wigwam Resort on Lake of the Woods sponsored by Rowell Laboratories. The drawing was held at the conclusion of the Minnesota State Medical Meeting, May 22-24.

* * *

Dr. Bayard T. Horton, emeritus consultant in medicine in the Mayo Clinic, Rochester, was elected president of the American Association for the Study of Headaches recently at the annual meeting of the association in New York City.

* * *

Dr. Theta Wolf, St. Paul, was recently elected secretary of the Minnesota Council for the Gifted.

* * *

Dr. Starke R. Hathaway, director, division of clinical psychology, and **Dr. Donald G. Paterson,** professor, emeritus of psychology, of the University of Minnesota presented invited papers at the meeting of the International Association of Applied Psychology in Copenhagen, August 13-19.

* * *

Dr. Herbert Dorken was the recent recipient of a special project grant from the National Institute of Mental Health.

* * *

Teaching at the University of Hawaii during summer session is **Dr. Willis E. Dugan,** professor of educational psychology at the University of Minneseota.

* * *

New officers of the Minnesota Psychiatric Society are: president, **Dr. Clifford O. Erickson,** Minneapolis; president-elect, **Dr. Burtrum C. Schiele,** University of Minnesota; and secretary-treasurer, **Dr. Richard M. Steinhilber,** Mayo Clinic. Council members are: **Dr. David A. Boyd, Jr.,** Mayo Clinic; **Dr. Otto N. Raths, Jr.,** St. Paul; **Dr. John J. Regan,** Minneapolis; and **Dr. David J. Vail,** state department of welfare.

Dr. David Anderson, Austin, was named president, and **Dr. Lyle Hay,** Minneapolis, was named president-elect at the recent annual meeting of the Minnesota Surgical Society. **Dr. Kenneth Storsteen,** Duluth was elected Vice President, and **Dr. Josiah Fuller,** Duluth, secretary-treasurer.

* * *

Doctors Earl C. Elkins, David G. Pugh, Lewis B. Wooner, David C. Dahlin, Dr. James W. Dushane, Kinsey M. Simonton, Paul R. Lipscomb, Collin S. MacCarty, and **Albert Faulconer, Jr.** were promoted from the grade of Assistant Professor to Professor in the Mayo Foundation. The Mayo Foundation is a part of the Graduate School of the University of Minnesota.

* * *

Dr. John J. Gisvold has become associated with **Doctor Arnold M. Berg** of Roseau in the Roseau Clinic.

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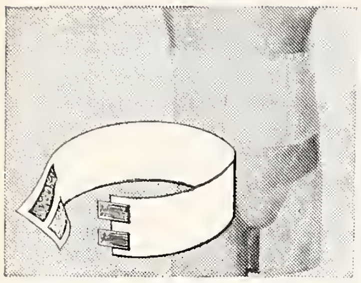

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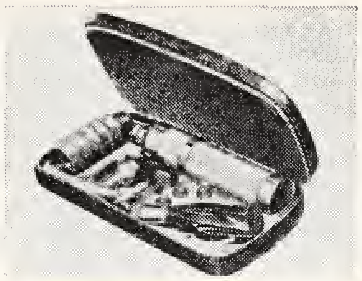

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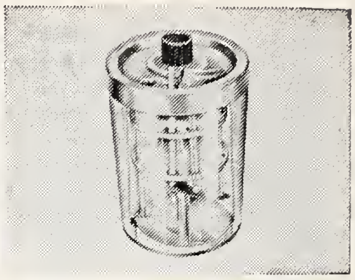

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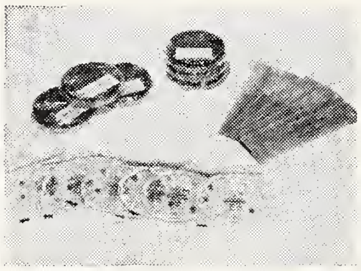

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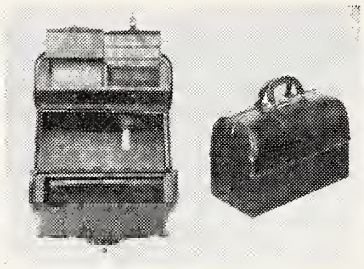

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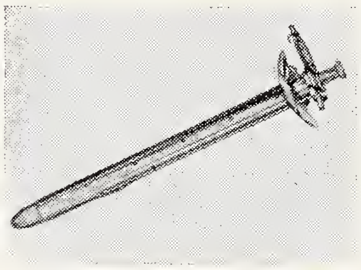

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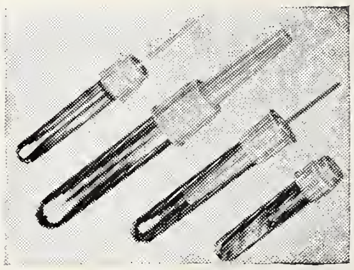

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Dr. Morris L. Lommen, Austin, has joined his father **Dr. P. A. Lommen, Sr.** and brother, **Dr. Peter A. Lommen, Jr.** in their medical practice at the Lommen Clinic.

* * *

Dr. Ted Lelwica of Winona will assist **Dr. C. R. Pelzl** at the Pine River Clinic for a few months.

* * *

Dr. George Martin was recently elected president of the medical staff of Northwestern Hospital. **Dr. H. P. Wendt** was named vice-president and **Dr. Milton Starekow,** secretary.

* * *

Dr. Brynjulve Kvamme, Saginaw, Michigan, is now practicing at the Mabel Clinic.

* * *

Dr. R. W. Barr was a recent speaker at the Montevideo Kiwanis Luncheon meeting.

* * *

Dr. Edward C. Maeder, Minneapolis, attended the American Medical Association Convention in New York in June.

* * *

The American College of Chest Physicians at their 27th annual meeting in New York awarded fellowship certificates to: **Doctors Arthur C. Kerkhof,** Minneapolis; **Richard G. Lester,** Minneapolis; **Richard L. Vargo,** Minneapolis; and **Donald E. Dorau,** St. Paul. "Minds That Came Back" written by **Dr. Walter C. Alvarez,** retired consultant from the Mayo Clinic, has been published. This book deals with persons who lost the full powers of their minds to one degree or another and then recovered them.

Dr. Robert T. Hilker has joined the Owatonna Clinic in the department of internal medicine.

* * *

Dr. Warren Jay-Jedrzyewski will be honored at a dinner for his many services to the city of Fridley on August 26th.

* * *

Dr. John Lester recently started practicing in Mapleton.

* * *

Dr. Donald Werner is to be in charge of the Aurora Business and Professional Association sponsored polio clinic to be held in Aurora.

* * *

Doctors Carl Heinzerling and **Patrick J. Adams** announced the forming of a partnership in Chaska's Doctors Park.

* * *

Dr. F. J. Swenson, currently associated with the Lenont-Peterson Clinic in Cook, will take up a three-year residency in orthopedic surgery at the Mayo Clinic, Rochester in January 1962.

* * *

Dr. John F. Briggs, St. Paul, spoke at the AMA meeting in New York on the subject of "Care can bring Happy Middle Age."

* * *

The newly elected officers of the Tuberculosis and Heal Association of Hennepin County are: **Dr. H. E. Drill,** Hopkins, president; and **Dr. Sumner S. Cohen,** St. Louis Park, first vice President. **Dr. D. S. Fleming,** Hopkins, **Dr. E. P. K. Fenger,** Edina, **Dr. D. R. Hastings,** Edina, **Dr. B. W. Mandelstam,** Minneapolis, and **Dr. W. W. Rieke,** Wayzata, were all re-elected as members of the board.

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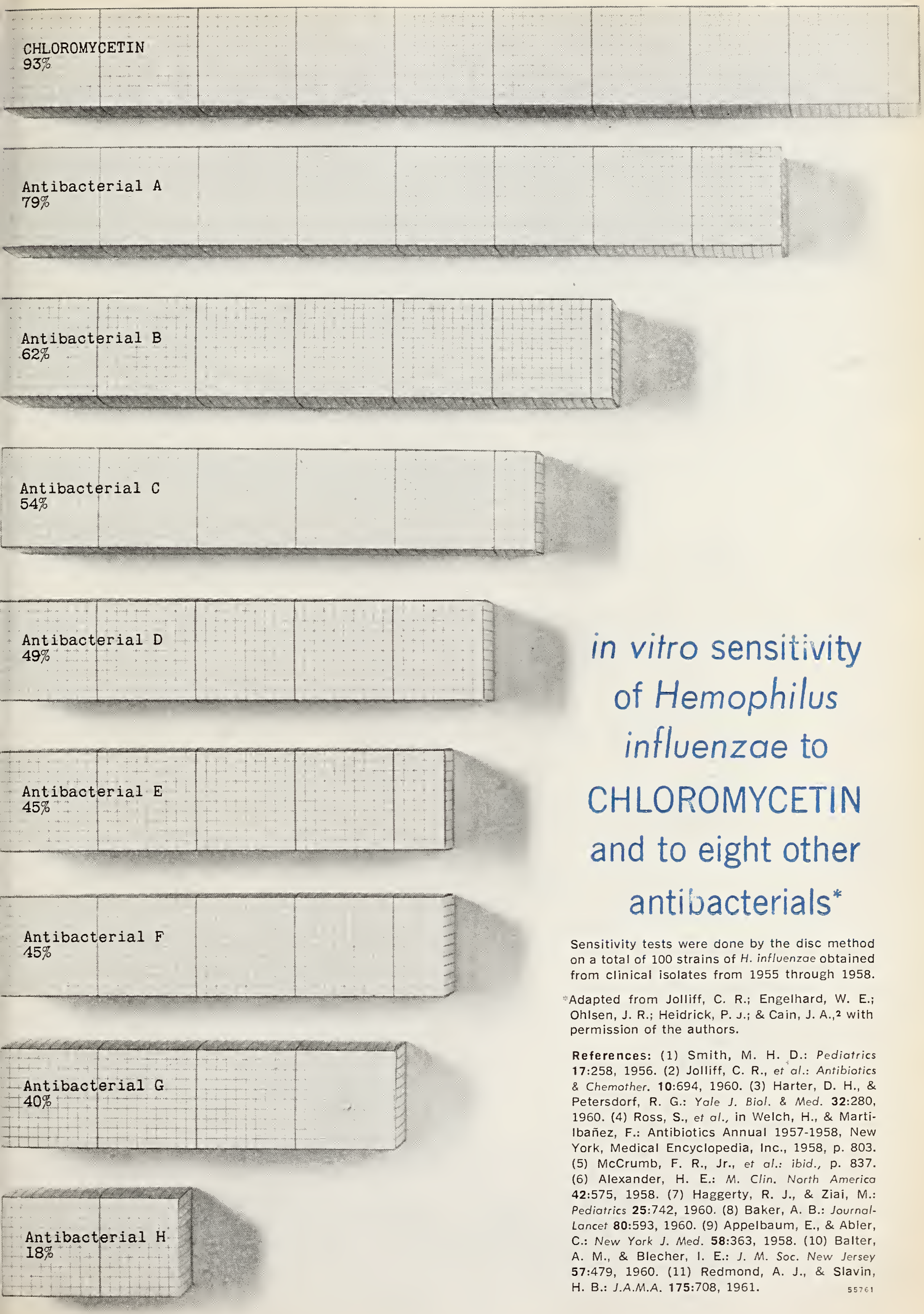

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Contents fo

SCIENTIFIC ARTICLES

ORIGINAL CONTRIBUTIONS

Neurodermatitis
Robert R. Kierland, M. D.
Rochester, Minnesota....................401

Untoward Reactions to Antibiotics
Byron L. Riggs, Jr., M. D., Joseph E. Geraci, M. D.
Louis E. Prickman, M. D.
Rochester, Minnesota....................406

The Role of Serotonin in Anaphylaxis and Endotoxin Shock
William R. Meeker, Jr., M. D., Richard B. Davis, M. D.
Minneapolis, Minnesota....................417

Griseofulvin in the Treatment of Dermatomycoses
James L. Tuura, M. D., Duane R. Anderson, M. D.
and Francis W. Lynch, M. D.
Minneapolis, Minnesota....................422

Tuberculin Testing in Pennington County
N. R. Whitney, M. D.
Rapid City, South Dakota....................428

ABSTRACTS AND BRIEFS....................431

BOOK REVIEWS....................432

Minnesota
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Duluth Surgical Society
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Minneapolis Obstet. and Gynecol. Soc.
Minneapolis Surgical Society
Minnesota Academy of Medicine

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and Oto-Laryngology
Minn. Society of Clinical Pathology

Medicine

ctober, 1961

Volume 44
Number 10

MISCELLANEOUS ARTICLES

PRESIDENT'S LETTER 433

EDITORIALS

Drug Eruptions
Charles J. Balogh, M. D., Minneapolis, Minn. 435

Nomenclature and Diagnosis in Coronary Diseases, The Role of Effort, III Coronary Occlusion
Arthur M. Master, M. D., New York, New York 436

Kenny Rehabilitation Institute
Frank H. Krusen, M. D., Minneapolis 437

MEDICAL ECONOMICS 440

THE ART OF MEDICINE 442

BLUE SHIELD A-41

MEDICAL EDUCATION A-43

MEETINGS AND ANNOUNCEMENTS A-45

IN MEMORIAM A-51

PHYSICIAN'S DIARY A-53

CLASSIFIED ADVERTISING A-56

INDEX TO ADVERTISERS A-57

Minn. Society of Internal Medicine
Minn. Society of Neurol. & Pysch.
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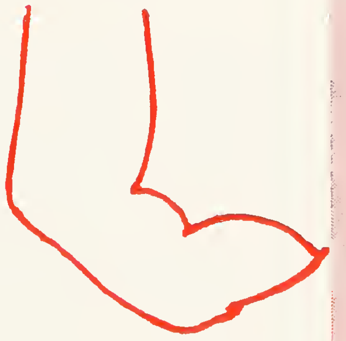
"But doc, when this terrible itching starts I just gotta scratch." Thus speaks the patient with neurodermatitis. This article emphasizes the importance of the itch-scratch cycle in neurodermatitis, and it delves into both local and systemic treatment for this troublesome complaint.

neurodermatitis



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MUCH HAS BEEN written on the clinical types of neurodermatitis. For the purposes of this presentation, however, the term will be restricted to include two basic entities, namely (1) lichen simplex chronicus (lichen Vidal), for which the most frequently known synonym is "localized neurodermite," and (2) atopic dermatitis, or disseminated neurodermatitis. Many conditions are considered by dermatologists to be basically psychogenic in origin but these have terms and findings other than the above. Furthermore, it should be realized that any dermatosis of whatever origin may show exaggerated symptoms and signs under psychogenic stress or strain. This aspect is not confined to dermatologic conditions but is important in other branches of medicine as well.

Neurodermatitis may be defined loosely as a chronic, localized or widely disseminated cutaneous inflammation associated with lichenification and paroxysms of intense pruritus.

Etiology

Localized neurodermatitis, or neurodermite, is considered by many to be the result of pruritus at the site of previous cutaneous damage. Itching ensues at the site of damage, followed by scratching. As this process continues, the skin becomes lichenified and shows superimposed excoriations. The cutaneous damage may be located anywhere on the body, and it precipitates the itch-scratch cycle. As this cycle continues and becomes more exaggerated, the characteristic findings of lichen simplex chronicus appear.

The exact cause of the second entity, namely atopic dermatitis, is unknown. Certain biochemical or enzymatic phenomena that involve the autonomic nervous system apparently produce many of the signs and symptoms of atopic dermatitis. An association with other allergic manifestations exists in the patient or in his family in about 70 per cent of cases. However, just because one sibling has atopic dermatitis, it does not follow that other children or future children necessarily will have the same condition.

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Climatic influences have much to do with atopic dermatitis. In upper midwest states, the great majority of patients are much worse in the winter than in the summer. In this connection, ultraviolet light and the amount of vapor pressure in the air are important, as is the associated dry skin of atopic persons. Some patients have more pruritus during the summer because of interference with the delivery of sweat to the surface of the skin.

Psychogenic influences probably are more significant as far as management of the patient is concerned than are the climatic or allergic manifestations. Although great controversy rages concerning the influence of the psychogenic state, it undoubtedly is one of the major trigger mechanisms that precipitate and exaggerate the signs and symptoms.

Associated with atopic dermatitis are many physiologic stigmas; some of those most frequently seen are vasoconstriction of the acra, vasodilatation at the sites of involvement and the characteristic delayed blanch reaction. Intradermal injection of methacholine (mecholyl) chloride or acetylcholine in a normal person produces vasodilatation; in the atopic patient, however, it causes a blanching reaction that extends beyond the injection wheal. The majority of patients who have atopic dermatitis show a white line on the skin in response to stroking, whereas the normal person usually shows the so-called triple response characterized by a red line, wheal and flare. The patient with atopic dermatitis does not show any flare response or whealing reaction and, as just indicated, has a white-line rather than a red-line response. This is not characteristic of the atopic state, however, as this reaction is seen in other exfoliative conditions of the skin characterized by erythema and chronicity.

Clinical Signs

Localized neurodermite appears as an excoriated lichenified plaque (or plaques) of dermatitis that is dry and scaly, with ill-defined borders. The borders merge gradually into normal skin in contrast to the sharply delineated borders of other dermatoses, notably psoriasis. The neurodermite is not often seen until within or past the third decade of life. It may appear anywhere on the body but the most frequent sites of predilection are the anogenital zone, the nuchal region (especially in women) and the extremities, usually about the wrists, elbows, knees and ankles. It should be emphasized that neurodermite may be seen in association with or secondary to other pruritic plaques of dermatitis, such as in chronic contact dermatitis or in psoriasis when the individual lesions are pruritic.

The patient with atopic dermatitis has itching that precedes visible cutaneous changes. The course of the disease is chronic. It is characterized by eczematization (crusting and moisture) in infancy; as the child grows older and if the eczema persists, it is characterized by lichenification and dryness of the skin in adults. The sites of predilection are the histamine-flush zones, namely the face, neck, antecubital spaces and popliteal fossae. Atopic dermatitis often is accompanied by retention of sweat, with interference in the delivery of sweat to the surface; in such patients, the eruption and pruritus may be much worse in summer in contrast to the condition of the usual patient, whose dermatitis is worse in winter. These patients have dry and frequently ichthyotic skin.

Patients with neurodermatitis appear to have a certain personality pattern. They are aggressive, dynamic and irritable, and are not content to "let the rest of the world go by." They are perfectionistic and meticulous in all of their activities. They usually state that whenever the stress and strain of daily life become severe or pronounced, the itching becomes worse and the dermatitis is accentuated.

Complications are few in either the localized or disseminated type of neurodermatitis. The presence of secondary infection is remarkably unusual. Cataracts are seen in approximately 10 per cent of patients at the Mayo Clinic with atopic dermatitis. These cataracts are central and anterior or posterior polar in location rather than medullary or peripheral, as seen in the cataract of the aging. The more severe the dermatitis, the greater is the likelihood of the development of a cataract. Kaposi's varicelliform eruption is a serious complication of atopic dermatitis; this is an acute fulminating vesicular eruption caused by either the virus of herpes simplex or cowpox vaccine. When produced by the latter agent, the condition is called "vaccinia" or, preferably, "eczema vaccinatum."

Another condition is best designated as "neurodermatitis of the elderly person." The disease in these older patients is characterized by an exfoliative reaction or universal erythroderma. The diagnosis usually is made by exclusion. Exfoliative psoriasis, lymphoblastomas and exfoliative states of other origin must be excluded. It must be remembered that atopic dermatitis in the adult is a dry eruption. When eczematization, exudation and crusting ensue, these changes are due more often to overtreatment or excessive excoriation than to the basic condition itself.

Prognosis

The prognosis for life is excellent in all these conditions. However, the outlook for quick relief of the problem is less good. The patient who has lichen simplex chronicus may be assured that the condition is benign, is not infectious to others and is not precancerous. It is difficult to treat this disease satisfactorily, but with cooperation it is an easier problem. Sometimes I facetiously point out to a patient that the eruption is a simple thing for the physician to cure but a most difficult thing for the patient to eradicate. The reason for this, of course, is that if the patient is able to stop excoriating himself, the eruption will clear without treatment. This is easier said than done, however, and a patient cannot be criticized or castigated because he scratches himself.

With regard to infantile eczema, it can be pointed out to the parents that the majority of babies so affected will outgrow their eczema when they are about 2 or 3 years of age. Infantile eczema is more troublesome to the parent than it is to the afflicted baby.

Adults with atopic dermatitis present another problem. This condition continues for years and years. The patient may be helped considerably by proper treatment and care, yet no treatment exists that will eradicate the disease in 100 per cent of patients. The patient should be told this instead of being promised revolutionary cures. Neurodermatitis of elderly patients presents a similar problem, because it persists for years in various degrees. The ultimate prognosis in all types of neurodermatitis depends on the treatment given, the detail with which the physician discusses the problem with the patient, and the cooperation of the patient himself.

Treatment

Treatment can be divided conveniently into two types, namely local and systemic. Two basic tenets must be considered in the treatment of neurodermatitis and all other dermatologic conditions. First, the physician should begin with that type of treatment which is the most soothing and is compatible with the basic morphologic lesion present; this means wet dressings for an acute erythematous exudative condition, and stimulating ointments for a chronic lichenified eruption. Secondly, as long as one regimen of treatment is providing relief and continued improvement, that routine should be maintained. If these tenets are not observed, one experiences great difficulty with reactions caused by overtreatment, causing harm to the patient rather than good.

Local Therapy.—Baths are one of the most frequently used modalities in the treatment of the more generalized reactions of atopic dermatitis. These also may be used for the patient who has multiple plaques of neurodermatitis. Tar and colloid baths are well tolerated by most patients, providing relief from pruritus and soothing the eruption itself. Antiseptic baths, such as those employing potassium permanganate or sulfur, are indicated in the presence of secondary infection. Baths with an antiseptic detergent such as pHisoHex also may be used in the presence of secondary infection. The colloid bath most frequently used at the clinic contains prepared powdered oatmeal. A bath containing half a cup of baking soda and half a cup of cornstarch to half a tub of water is simple and often provides relief. Tar baths may be prepared with liquor carbonis detergens; many of the dermatologic pharmaceutical companies provide satisfactory material for tar baths.

The most frequently used wet dressings are those employing Burow's solution or boric acid. It is important to remember that boric acid is not always necessary and that cases of boric poisoning have been reported in the literature. If the patient is unable to tolerate the usual or even weaker dilutions of Burow's solution, dressings wet with tap water are frequently soothing. In the presence of infection, Dalibour water is a soothing and mildly antiseptic wet dressing. One commonly used formula for Dalibour water contains 6 gm. of copper sulfate, 20 gm. of zinc sulfate and sufficient camphor water to make a volume of 1000 ml. This is then diluted 15 to 25 times for use. Silver nitrate and other preparations also can be used for wet dressings. It is essential that wet dressings be changed every 2 or 3 hours and that the liquid be allowed to evaporate spontaneously; they must not become dry.

If the eruption is less acute, which means that mild scaling is present, that the eruption is dusky rather than acutely inflammatory or erythematous, and that exudation is absent, then creams and lotions may be used. Many such preparations are available and for the most part are satisfactory. Creams and lotions, rather than greasy ointments, are preferable for use in intertriginous zones. Ointments or lotions containing tar are frequently of great value. In this connection, even in the acute inflammatory phases, steroid agents used locally are of benefit. Many of these preparations have antibiotics combined with them. They are used frequently, and for the most part they are without ill effect. However, contact sensitivity occurs with some of the antibiotics. Therefore, I prefer to give the steroid without an added antibiotic. If the local application of antibiotics or antiseptic creams, lotions or ointments is necessary, such agents should be used without the added steroid.

The "Goeckerman regimen," which was initiated for the treatment of psoriasis, is excellent treatment for the patient who has widespread atopic dermatitis without acute erythema; it can be modified for home use. At night, the patient applies an ointment containing a 2 per cent concentration of crude coal tar to the involved skin. This is removed with cottonseed oil or mineral oil the following morning, leaving a thin film of oily tar on the skin. The patient then is irradiated with ultraviolet light given by his physician, himself, or a member of his family in gradually increasing doses depending on the tolerance. After this, the patient takes a colloid or tar bath and then applies an emollient cream until that evening, when the tar ointment again is used.

Systemic Therapy. — Numerous preparations are available to provide some measure of relief in neurodermatitis. The antihistaminic agents may relieve pruritus to some degree, but they apparently provide most of their benefit from their sedative side reaction rather than the antihistaminic effect itself. These preparations are more valuable in an urticarial state than in the truly atopic condition. The ataractics, or tranquilizers, are used frequently during an acute emotional episode or an exacerbation of dermatitis, and they allow the patient to view his eruption with less alarm and apprehension. Nevertheless, their use cannot be continued indefinitely, and these medicaments must be considered as only temporary expedients. Minimal to moderate doses usually are effective. Trimeprazine tartrate (temaril) sometimes provides fairly effective relief of the pruritus of atopic dermatitis.

I do not like to use steroids either by mouth or by injection in the management of atopic dermatitis. All physicians who have had experience with atopic dermatitis adjust their treatment according to the results of that experience; my colleagues and I have had more difficulty with the undesired effects of steroid therapy (the physiologic side effects) than is warranted by the amount of benefit derived from such agents. Such patients frequently come for consultation because they have not only serious atopic dermatitis but also severe degrees of hypercortisonism. If steroids are to be used, they should be given only during an acute exacerbation or a severe flare; they should be administered in full doses for 4 or 5 days and then quickly withdrawn, so that the patient is no longer receiving steroid therapy at the end of 2 to 2½ weeks.

Other Aspects of Treatment.—There are special modalities of treatment, the previously mentioned use of ultraviolet light being one. Autohemotherapy is sometimes helpful because of its ability to stimulate the endogenous secretion of steroids. This involves withdrawal of 8 to 10 ml. of blood from one of the antecubital veins and immediately injecting the blood intramuscularly into a buttock. This may be done twice weekly for 4 or 5 weeks.

Treatment directed toward the psychogenic features is most important and may be conducted by the general physician or the dermatologist. Only rarely are the services of a psychiatrist required. The patient is urged to adopt a more "laissez faire" attitude toward life and its problems, and to develop routines and hobbies wherein he can avoid or forget much of the stress and strain to which he is subject. Above all, this requires sympathetic understanding by a physician who is willing to listen to the patient.

The environmental factor in atopic dermatitis is a consideration that frequently is discussed. It is true that many of these patients do better in a warmer climate than in the upper midwest states, particularly when their dermatitis becomes much worse during the winter. However, these patients should not "pull up stakes" or make any socio-economic dislocation until they have found out by repeated trial that their skin is better in warmer climates. Some patients are better in a warm dry climate, but others are better in warm moist surroundings. They should investigate both possibilities. Such a change is not a curative but does provide a great deal of relief for some patients.

Summary

Neurodermatitis is a form of chronic cutaneous inflammation, local or general, associated with lichenification and intense pruritus. The localized form is a result of the itch-scratch cycle. The cause of the generalized form, or atopic dermatitis, is not known, but a prominent association with climatic, allergic and psychogenic influences is present.

The condition is benign but treatment is difficult. Local therapy includes baths of various types, wet dressings, and the use of creams or lotions, which may contain antibiotics and steroids. The use of coal tar ointment and ultraviolet light often is efficacious. Systemic treatment involves use of antihistaminics, tranquilizers and steroids. Steroids should be given cautiously and for short periods only. Treatment of the psychogenic factors is important. A change of climate may help.

WHAT'S YOUR DIAGNOSIS?

Mr. T. B., age 36, weighing 270 lbs., was admitted to the hospital with acute abdominal pain.

Three days prior to admission he had observed pain in the abdomen, principally on the left side and in the region of the umbilicus. This pain was not related to meal. He had no vomiting. He then had a period of temporary relief and consulted his physician because of some acute skin lesion which were diagnosed by a dermatologist as being typical of an acute xanthomatosis.

The severe pain in the abdomen recurred and he was then admitted to the hospital.

The physical examination revealed marked obesity. Multiple acute papillar xanthomatosis was found scattered over the upper extremities and over the thigh. Blood pressure 164/100. Heart tones normal. The abdomen was enormously obese. It was tense and distended. Tenderness was evident throughout. The abdomen was not board-like. Rebound tenderness was evident.

Fasting blood sugar 290 mg %. Serum amylase 24. Blood cholesterol 700 mg %. Blood lipids 6,030 mg %. Fat droplets were grossly visible. Hemoglobin 16.5. White count 18,650. The urine examination showed 3+ sugar and 30 or 40 granular casts per high power field. Specific gravity 1.042.

Colon x-ray was negative. No diverticulitis seen. No tumor. No evidence of intestinal obstruction. Electrocardiogram was normal.

Surgical consultation indicated that because of the persistence of the severe pain and the other findings an emergency laparotomy was indicated at which time the diagnosis was established.

What is your diagnosis? See page 413.

UNTOWARD REACTIONS

to Antibiotics

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Millions of pounds of antibiotics are given each year to tens of millions of patients. Such quantities of both drugs and patients are bound to be associated with reactions. Remember this summary the next time you prescribe or inject an antibiotic.

The advent of antibiotics marks an epoch in the history of medicine. Their use has become widespread and annual production now is measured in millions of pounds. However, a variety of allergic and toxic reactions, many of which are potentially lethal, have been reported following use of these agents. The purpose of this paper is to emphasize the untoward effects that may occur during antibiotic therapy. If these possibilities are kept in mind and if, when indicated, suitable prophylactic measures are instituted, the occurrence of serious reactions will be minimized.

As with all potent drugs, the decision as to the use of a given antibiotic will depend on weighing the specific indication for its use against the potentially injurious effects. In recent years, resistance of certain strains of staphylococci to the conventional antibiotics has led to the development of newer antibiotics that, although effective against these organisms, often have a greater incidence of untoward reactions. Unless the clinician is aware of the possible allergic and toxic symptoms that may occur during administration of a given antibiotic, these may be interpreted wrongly as manifestations of the underlying disease.

Table I

Reported Reactions to Penicillin

Toxic Reactions

- Irritation of central nervous system (after intrathecal injection)
- Local reaction at site of injection
- Stomatitis, glossitis, black hairy tongue
- Staphylococcal enteritis
- Pseudomembranous ileocolitis
- Nausea and vomiting (when given orally)

Allergic Reactions

- Cutaneous rashes
- Exfoliative dermatitis
- Erythema nodosum and multiforme
- Serum-sickness syndrome
- Angioneurotic edema
- Chronic urticaria
- Stevens-Johnson syndrome
- Anaphylaxis
- Drug fever
- Bronchial asthma
- Peripheral neuritis
- Systemic lupus erythematosus
- Eosinophilia
- Allergic psychosis
- Hemorrhagic gastroenteritis
- Encephalitis
- Acute nephritis
- Lower nephron nephrosis
- Myocarditis
- Loeffler's syndrome
- Polyarteritis
- Dermatomyositis
- Acute hepatic necrosis
- Thrombocytopenia

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Penicillin

Penicillin is an inexpensive bactericidal drug of low toxicity. It is the most widely used of the antibiotic agents, accounting for some 40 percent of all antibiotic production.[1] Toxic reactions are few and are listed in table 1. However, the drug is highly allergenic. The reaction rates reported after use of penicillin have varied, which may be caused in part by variability in screening procedures to eliminate potential reactors. In a series of 22,853 patients receiving penicillin for the treatment of syphilis at United States Public Health Venereal Disease Clinics, the number of patients experiencing reactions was 9.54 per 1000 patients treated.[2] With prolonged treatment, the incidence of reactions increases; thus, in a group of 32 patients receiving benzathine penicillin G as prophylaxis against rheumatic fever for periods up to 27 months, six patients (19 percent) had allergic reactions, and one fatal anaphylactic reaction occurred.[3]

Allergic reactions to penicillin can be divided conveniently into delayed and immediate types. The delayed type is by far the commoner, and it consists predominantly of cutaneous rashes. The majority of the immediate reactions are anaphylactic in type, although acute angioneurotic edema with medullary involvement and death may occur[1]. The exact incidence of anaphylactic reactions is unknown but is undoubtedly small. In the previously mentioned series of patients receiving penicillin at U. S. Public Health Clinics, the incidence of patients having anaphlyaxis was 0.88 per 1000.[2] A survey by Welch and associates,[1] however, left no doubt that in this country penicillin is still the worst offender, being involved in 93 percent of life-threatening reactions from antibiotics.

Anaphylactic reactions to penicillin usually occur within minutes after the parenteral injection. The patient may note a premonitory burning or itching at the site of injection. Sweating, palpitation, urticaria, nausea and vomiting, dizziness and asthma may progress to syncope, shock and death. Recovery may occur spontaneously in a few minutes, or the patient may remain in a shocklike state for several hours. The following necropsy findings have been noted: bronchial spasm and edema; peripheral vasodilatation and stasis of blood; extravasation of fluid into the body tissues and occasional hemorrhage and necrosis of the liver.

Hypersensitivity reactions have occurred in persons on their first exposure to penicillin. These may follow the use of a syringe contaminated with penicillin, the use of such agents as penicillin-containing tooth paste or the Salk vaccine, or through cross sensitivity with Trichophyton in persons who have epidermophytosis. Today, however, with the wide use of penicillin in veterinary medicine, the chief nonpharmacologic source of sensitization is through the medium of cows' milk. In a survey of 16 scattered U. S. cities, significant amounts of penicillin were found in 3.2 percent of random samples of milk.[4] New penicillin analogues have been released recently. It is too early to determine whether these agents will decrease the incidence of untoward reactions. In a group of 210 healthy volunteers receiving potassium alpha-phenoxyethyl penicillin orally for 15 to 21 days, evidence of intolerance or allergic manifestations was not seen.[5]

Streptomycin and Dihydrostreptomycin

Streptomycin, like penicillin, is an antigenically potent agent capable of causing anaphylaxis. With prolonged administration, as in the treatment of tuberculosis, allergic reactions may occur in as many as 11 percent of patients.[6] In short courses, however, the incidence of reactions is similar to that of penicillin. The major problem with both streptomycin and dihydrostrepto-

Table 2

Reported Reactions to Streptomycin and Dihydrostreptomycin

Toxic Reactions	
Eighth-nerve toxicity (vestibular=streptomycin; cochlear=dihydrostreptomycin)	Staphylococcal enteritis
Stomatitis	Pseudomembranous ileocolitis
Central visual scotomas	Encephalopathy
Renal irritation	Choreiform movements
Paresthesias of lips and extremities	Psychosis
Headache	Nausea and vomiting
Allergic Reactions	
Cutaneous rashes	Bronchial asthma
Contact dermatitis	Aplastic anemia
Exfoliative dermatitis	Thrombocytopenia
Anaphylaxis	Agranulocytosis
Angioneurotic edema	Eosinophilia
Serum-sickness syndrome	Drug fever

mycin is their toxic effect on the eighth cranial nerve. The principal effect of streptomycin is on the vestibular division of this nerve.[7] The incidence is related to the daily dose and the duration of treatment. With the exception of aged patients, most persons are able to compensate for symptoms resulting from vestibular damage, although an occasional patient may experience sufficient residual vertigo and ataxia to interfere with gainful occupation.

The principal effect of dihydrostreptomycin, on the other hand, is on the auditory division of the eighth cranial nerve.[7] Reports by European workers that the pantothenate salt of dihydrostreptomycin or streptomycin is less ototoxic than is the sulfate salt have not been confirmed in this country.[8,9] A combination of streptomycin and dihydrostreptomycin is said to produce less nerve toxicity than either agent used singly.[10] It is now apparent, however, that the added danger of delayed permanent auditory damage from dihydrostreptomycin outweighs the usefulness of such a combination. Shambaugh and co-workers[11] reported 32 cases of deafness after use of dihydrostreptomycin. In seven of these cases, the total dose was 3 gm. or less; a latent period of 2 to 6 months commonly occurred between administration of the drug and onset of the hearing loss. Therefore, it is best not to use dihydrostreptomycin.[12] Nephrotoxicity to streptomycin and dihydrostreptomycin is unusual and is reversible in patients with normal kidneys.

Table 3

Reported Reactions to Chloramphenicol

Toxic Reactions	
Glossitis	Granulocytopenia
Stomatitis	Aplastic anemia
Altered sense of taste	Pancytopenia
Nausea	Thrombocytopenia
Vomiting	Leukopenia
Diarrhea	Hemolytic anemia
Pruritus ani	Vasomotor collapse in infants
Peripheral and optic neuritis	Moniliasis
Staphylococcal enteritis	Sprue syndrome
Pseudomembranous ileocolitis	Hepatic damage
Allergic Reactions	
Cutaneous rashes	Drug fever
Anaphylaxis	Medullary edema

Chloramphenicol

Chloramphenicol on rare occasions can be responsible for the development of serious blood dyscrasias, particularly aplastic anemia.[13] In a nationwide survey of 827 hospitals in the years 1953 through 1956, Welch and associates[1] collected reports of 46 cases of blood dyscrasia presumed to be caused by antibiotics. In 41 of these cases, chloramphenicol was involved either singly or in combination with other drugs. When chloramphenicol was involved, the death rate was 61 percent. Whether the bone-marrow depression results from an allergic or a toxic mechanism is still in dispute, although this drug contains the nitrobenzene ring, an entity known to be toxic to the bone marrow. The incidence of hematologic effects appears to be greater with prolonged administration or intermittent use. Therefore, the Council on Drugs of the American Medical Association has stated that chloramphenicol should not be used prophylactically in trivial infections, or in infections in which other, less dangerous antibiotics may be effective.[13] When chloramphenicol must be used, blood counts should be done at 3-day intervals while the drug is being given. This does not give complete protection, however, since fulminant aplastic anemia may develop without initial leukopenia, and it often occurs after cessation of treatment.

In premature infants receiving the usual dose of chloramphenicol and in newborns receiving large doses, the so-called gray syndrome may occur.[14] This consists of vomiting, diarrhea, abdominal distention, lethargy, respiratory distress, cyanosis, circulatory collapse and often death. In these cases, high concentrations of free chloramphenicol in the blood have been demonstrated.[15] In some instances, withdrawal of the drug stops the progression of the symptoms. The casual factor appears to be the immature functional status of the liver and kidneys in these infants. Thus, both the usual hepatic inactivation of chloramphenicol by its conjugation to the inactive glucuronide and the renal elimination of chloramphenicol are impaired.[14,15]

Other reactions to chloramphenicol are of a low order of frequency and for the most part are similar to the effects of the tetracyclines. These consist mainly of minor gastrointestinal symptoms.

Table 4

Reported Reactions to Tetracyclines

Toxic Reactions	
Glossitis	Pruritus ani
Stomatitis	Staphylococcal enteritis
Black hairy tongue	Pseudomembranous enterocolitis
Esophagitis	Moniliasis
Nausea and vomiting	Chills and fever (intravenous use)
Proctitis	Phlebitis (intravenous use)
Colitis	Hepatic damage (intravenous use)
Diarrhea	Increased blood urea
Vaginitis	
Allergic Reactions	
Cutaneous rashes	Granulocytopenia
Exfoliative dermatitis	Thrombocytopenic purpura
Systemic lupus erythematosus	Acute hemolytic anemia
Anaphylaxis	

Tetracyclines

The analogues making up this group of antibiotics are of a low order of allergenicity. Anaphylactic reactions and blood dyscrasias are extremely rare. Although these antibiotic agents are fairly well tolerated, flatulence is frequent and nausea and vomiting occasionally may occur. Demethylchlortetracycline, a new member of the family, is perhaps effective in smaller doses than are the other tetracyclines. Preliminary reports suggest that it may cause fewer gastrointestinal side effects, probably because a smaller daily dose is required.[16]

The chief danger following use of the tetracyclines is the development of staphylococcal enteritis or pseudomembranous ileocolitis. The causative mechanism is not completely understood, and it is not known why such complications develop in some patients and not in others under apparently identical circumstances. In those patients receiving antibiotics, alteration of the normal intestinal flora apparently is the major causal factor of such a reaction.[17] Hypersensitization, relative vitamin deficiency and direct toxicity all may be contributing factors. Ileocolitis is particularly prone to occur when the tetracyclines are given postoperatively. For this reason, their use as "prophylactic" agents in "clean" operations is to be condemned.

It is well known that use of the tetracyclines may result in an increase in drug-resistant strains of staphylococci in the nasopharyngeal flora of the patient under treatment. Berntsen and McDermott[18] have shown that this is partly owing to an increased transmissibility of resistant staphylococci to patients receiving tetracyclines.

Erythromycin

This antibiotic has a remarkably low sensitizing potential.[19] Even cutaneous rashes are extremely rare. The chief side effects are nausea and vomiting, abdominal cramps and diarrhea. These are more likely to occur with larger doses. With the exception of a single instance of anaphylaxis, serious allergic or toxic reactions have not been reported.[20]

Oleandomycin and Triacetyloleandomycin

Both of these agents appear to be of a low order of toxicity and allergenicity. Minor gastrointestinal symptoms appear to be the chief untoward effects. Our experience with the clinical use of these agents has been slight.

Table 5

Reported Reactions to Erythromycin

Toxic Reactions	
Black hairy tongue	Diarrhea
Nausea	Epigastric burning
Vomiting	Abdominal pain
Allergic Reactions	
Cutaneous rashes (uncommon)	
Anaphylaxis (rare)	

Table 6

Reported Reactions to Oleandomycin and Triacetyloleandomycin

Toxic Reactions	
Nausea	Diarrhea
Vomiting	Diuresis
Esophagitis	Hepatic damage
Allergic Reactions	
Cutaneous rashes	

Novobiocin

This is a highly allergenic agent. Allergic dermatitis occurs in at least 9 percent of the patients receiving this agent, with drug fever in 3 percent, eosinophilia in 1.5 percent and leukopenia in 0.6 percent.[21,22] Thrombocytopenia and agranulocytosis also have been reported. Toxic effects include mild diarrhea in 37 percent of cases, with minor gastrointestinal symptoms. In about 0.6 percent of cases, a yellowish discoloration of the skin and sclera may develop.[23] In such instances, the direct-reacting fraction of the serum bilirubin is normal and the indirect-reacting fraction is increased. In the usual case, the serum pigment is a lipochrome derived from the products of metabolism of novobiocin. However, in the case reported by Cox and associates,[23] the pigment was unconjugated bilirubin; since this patient also had retention of bromsulphalein, it was suggested that novobiocin may have had a specific effect on the hepatic conjugation of bromsulphalein and bilirubin. The differentiation between these two types of pigmentation depends on the extractability of the pigment with chloroform or the spectrophotometric characterization or both.[23]

Table 7

Reported Reactions to Novobiocin

Toxic Reactions	
Nausea and vomiting	Yellow pigmentation of skin
Epigastric distress	Agranulocytosis
Diarrhea	Leukopenia
Hepatic damage ?	Thrombocytopenia
Allergic Reactions	
Cutaneous rashes	Drug fever
Exfoliative dermatitis	Eosinophilia

Table 8

Reported Reactions to Polymyxin

Toxic Reactions	
Pain at injection site and local irritation	Neurotoxicity: paresthesias, ataxia, vertigo
Dizziness	Nephrotoxicity
Weakness	Respiratory depression
Allergic Reactions	
Pruritus	
Drug fever	

Table 9

Reported Reactions to Bacitracin

Toxic Reactions	
Pain at injection site	Nausea and vomiting
Anorexia	Nephrotoxicity
Allergic Reactions	
Cutaneous rashes	

Table 10

Reported Reactions to Neomycin

Toxic Reactions	
Eighth-nerve toxicity (cochlear)	Nephrotoxicity
Nausea and diarrhea (after oral use)	Respiratory arrest
Allergic Reactions	
Cutaneous rashes	

Polymyxin, Bacitracin, Neomycin

Although they usually are not administered systemically, these agents have been used in this manner for prolonged periods in the treatment of serious infection. If given carefully, a minimum of reactions are noted, and lives have been saved by their use. All three of these antibiotics possess considerable nephrotoxicity and are capable of causing depression of renal function, proteinuria, abnormal urinary sediments and retention of nitrogen. In extreme cases, uremia and death have followed the use of these agents. If the suggested daily dose is not exceeded in patients who have normal kidneys, there is usually no significant permanent renal damage. Exceptions have been reported, however, and thus it is necessary that serial laboratory determinations of renal function be made.[24] One of the most important prophylactic measures is forcing fluids to maintain a urinary output greater than 1 liter per day.[25]

Partial or complete deafness may occur with use of neomycin. This may develop as late as 1 or 2 weeks after cessation of therapy, and it is

Table 11

Reported Reactions to Kanamycin

Toxic Reactions	
Eighth-nerve toxicity (mostly cochlear)	Paresthesias
Nephrotoxicity	Blurring of vision
Allergic Reactions	
Drug fever	Eosinophilia
Cutaneous rashes	Anaphylaxis ? (positive immediate results of skin test)

usually permanent. The onset and development of the deafness are unpredictable. The incidence is much greater when doses exceeding 1 gm. per day are given for more than 1 week. Premonitory signs usually are absent. Since neomycin is poorly absorbed from the gastrointestinal tract, it has been widely used orally in the treatment of hepatic failure to sterilize the intestine.[26] However, Last and Sherlock[27] reported the finding of detectable amounts of neomycin in the blood of seven of 27 patients who had cirrhosis of the liver. The one surviving patient in this group had permanent deafness after use of neomycin.

Transient neurologic symptoms, such as ataxia and paresthesia, have been reported after use of polymyxin. A new antibiotic, colistin, which is structurally related to polymyxin, is currently under investigation, and preliminary reports suggest that it may be less nephrotoxic than is polymyxin.[28]

Kanamycin

Kanamycin is structurally and pharmacologically similar to neomycin. Like neomycin, its chief untoward effect is on the eighth cranial nerve and on the kidney. Its major toxicity is focused on the auditory division, although vestibular function also may be affected. Loss of hearing may be partial or complete and is usually bilateral and irreversible. The incidence of ototoxicity is related to the dose. Hawkins and coworkers[29] reported loss of hearing in 13 of 15 patients who received 7 gm. of kanamycin per week for 3 months in the treatment of tuberculosis. A research group in Japan,[30] however, studied similar patients and found loss of hearing in only three of 75 patients when doses of less than 6 gm. per week were used. In the great majority of the cases reported in these studies, the loss of hearing was not subjective and was detectable only by audiometry. Since loss of hearing for ordinary conversation usually is preceded by tinnitus or a loss of high-frequency tones on the audiogram, stopping administration of the drugs when these warning signs occur may prevent subjective deafness. Loss of hearing usually does not progress after withdrawal of medication, although exceptions have been reported. Vestibular damage may occur but is usually not severe.[31] As with other ototoxic drugs, kanamycin should be given with caution in patients who have depressed renal function. Although abnormalities in the urinary sediment are frequent, their presence does not correlate with the development of more serious signs of nephrotoxicity.[32] After prolonged medication and large doses, about one third of the patients give evidence of decreased tubular and glomerular function;[33] this apparently is reversible if use of the drug is stopped. The chief danger of nephrotoxicity is that it predisposes to ototoxicity.[33] Although eosinophilia is common with use of kanamycin, the incidence of allergic reactions does not appear to be increased.[30,32] No hematopoietic or hepatic damage has been reported.

Ristocetin

Hematologic abnormalities are the chief side effects of ristocetin. Neutropenia was present in 5.4 percent and thrombocytopenia in 1.5 percent of 333 patients receiving this antibiotic.[34] These abnormalities are particularly prone to occur when the daily dose exceeds 3 gm. Gangarosa and associates[35] reported the development of acute thrombocytopenia in three of 10 patients receiving ristocetin. This was thought to be contributory to the death of two of the patients; both of these patients had uremia, and con-

Table 12

Reported Reactions to Ristocetin

Toxic Reactions	
Leukopenia	Eighth-nerve toxicity (cochlear)
Thrombocytopenia	Nephrotoxicity
Thrombophlebitis (intravenous use)	Diarrhea
Allergic Reactions	
Cutaneous rashes	
Drug fever	
Eosinophilia	

siderable retention of ristocetin in the blood probably was present. The original data suggested a direct toxic effect on circulating platelets; this view is supported by the presence of pronounced agglutination of platelets when ristocetin is added to fresh human plasma.[36] Mild thrombophlebitis may occur at the site of intravenous injection. Other occasional complications include deafness and possibly nephrotoxicity.[37] Ristocetin appears to be moderately antigenic. Drug fever was reported in 3.6 percent of a large series of cases, with allergic dermatitis being present in 4.3 percent.[34]

Vanacomycin

Until recently, this agent was not available in pure crystalline form. It contained variable degrees of impurities and pyrogens, which often caused chills and fever almost uniformly about an hour after the intravenous injection. Pyrogens now have been removed from vancomycin, and the incidence of chills and fever has been reduced to a minimum.[38] The frequent occurrence of urticaria, pruritus and flushing noted with the earlier and more impure batches has been greatly reduced at present. With retention of nitrogen and the development of extremely high blood levels of vancomycin, involvement of the auditory nerve has been noted that may proceed to complete deafness.[39] After large doses, particularly in patients who have damaged kidneys and retention of nitrogen, further increases in blood urea may occur, but the value usually returns to the previous levels after treatment is stopped. However, severe nephrotoxicity in patients with presumably normal kidneys also has been reported.[37] Hepatic or hematopoietic reactions have not been observed thus far. A variable degree of phlebitis, usually minimal, occurs in almost all patients given this drug by the intravenous route.

Table 13

Reported Reactions to Vancomycin

Toxic Reactions	
Chills and fever (pyrogens)	Thrombophlebitis at site of intravenous injection
Eighth-nerve toxicity (cochlear), due to excessive levels	Nephrotoxicity ?
Allergic Reactions	
Cutaneous rashes	Drug fever
Exfoliative dermatitis?	Eosinophilia?
	Anaphylaxis

Table 14

Reported Reactions to Amphotericin B

Toxic Reactions	
Headache	Hepatic toxicity
Nausea and vomiting	Chills and fever
Diarrhea	Anemia
Abdominal distress	Nephrotoxicity
Hemorrhagic gastroenteritis	Thoracic pain
	Thrombophlebitis at site of intravenous injection
Allergic Reactions	
Cutaneous rashes	
Exfoliative dermatitis	

Amphotericin B

This new antifungal agent is apparently of low sensitizing potential. However, toxic effects are especially likely to occur if the drug is administered too rapidly. Signs of toxicity include headache, nausea, vomiting, anorexia, abdominal distress, diarrhea, chills and fever. These effects tend to become less frequent after the first few days of treatment, and they may be modified or prevented by premedication with analgesics, antihistaminics or chlorpromazine or by the intravenous administration of hydrocortisone. If the symptoms continue, a smaller dose may be used. After prolonged use of large doses of amphotericin B, the majority of patients exhibit some degree of azotemia. Proteinuria, microhematuria and micropyuria also may occur. However, permanent renal damage apparently does not occur. The blood urea usually decreases to normal values within 2 to 7 days after the cessation or interruption of therapy, following which treatment may be resumed. Mild to moderately severe anemia has been observed in some patients during use of amphotericin B,[40] and an instance of possible hepatotoxicity has been noted.[41] Thrombophlebitis commonly occurs at the site of intravenous injection but is not a significant problem.

Treatment of Reactions

The best treatment for drug reactions is their prevention. The following simple measures are suggested as means of decreasing the incidence of severe reactions to antibiotics:

1. All patients receiving antibiotics should be questioned carefully regarding previous untoward reactions to the material. Rosenthal[42] reported 30 fatal reactions to penicillin occurring in New York City from 1952 through 1957; in 14 of these cases, no inquiry had been made as to the prior administration of or reactions to penicillin.

2. Antibiotics should be used only for specific indications and not indiscriminately for vague "prophylaxis." This is especially true in the prophylactic administration of tetracyclines in clean abdominal operations because of the danger of staphylococcal enteritis or pseudomembranous ileocolitis.

3. Whenever possible, safer and less toxic antibiotics should be used. However, when administration of a toxic agent is indicated, it should be given without hesitation.

4. When feasible, an antibiotic that can be given orally is preferred over one requiring parenteral administration. Oral administration is followed by a lower incidence of anaphylaxis. Furthermore, anaphylaxis occurring with the use of an orally given drug is less likely to be fatal than is that with parenteral preparations.

5. Antibiotics should not be used longer than is necessary to control the infection. Welch and co-workers[1] reported the case of a 65-year-old man who had received 100 injections of penicillin each year for 6 years and then had an anaphylactic reaction after one of the injections.

6. When penicillin is to be used, skin or conjunctival tests should be done on all persons with atopic allergy or previous drug reactions or both. People in these categories have an increased incidence of anaphylaxis. Although the antibody that sensitizes smooth muscle cannot be measured, the skin-sensitizing antibody is thought to coexist with it in the great majority of cases. In the presence of negative results of skin or conjunctival tests, therefore, it is less likely that anaphylaxis will follow the subsequent administration of penicillin.[43] The skin test is considered to be more reliable and safer than the conjunctival test; a nearly fatal anaphylactic reaction with conjunctival testing has been reported.[44]

7. Intramuscular injections should be given into an extremity distal to a point where a tourniquet can be applied.

8. The patient should remain near medical facilities for about 30 minutes after the injection. The majority of fatal anaphylactoid reactions will occur during this time. A syringe filled with epinephrine and a well-equipped anaphylaxis tray should be readily available.

9. Always draw back on the syringe before the intramuscular injection is given. Intravenous injections, of course, carry a greater incidence of severe reactions.

10. When drugs of potential toxicity are used, routine examination of the patient and appropriate laboratory tests should be carried out periodically during treatment.

11. Streptomycin, dihydrostreptomycin, neomycin, bacitracin, polymyxin B, kanamycin, ristocetin and vancomycin should be used with caution in the presence of depressed renal function because of the danger of high blood levels from retention of the antibiotic. In such cases, less than the usual dose should be given and frequent measurement of the blood levels of the antibiotic should be made.[45]

12. The physician should be familiar with and alert to the signs and symptoms of reactions as opposed to the signs and symptoms of the underlying disease. When in doubt, administration of the drug should be stopped.

13. In severe infections, when use of the agent in question is compulsory and sensitivity is suspected, the agent may be given cautiously, accompanied by use of antihistaminics or corticosteroids or both. These measures will not prevent anaphylaxis, however. In the rare case, such as enterococcal endocarditis, in which penicillin is necessary for therapy and allergic sensitivity exists, desensitization may be necessary.

Treatment of fever and rashes caused by drugs is usually simple. Such symptoms usually respond to withdrawal of the drug and the admin-

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ANSWER TO WHAT'S YOUR DIAGNOSIS:
The acute abdomen was due to acute pancreatitis.

istration of antihistaminics. In cases of the "serum-sickness" syndrome and severe angioneurotic edema, corticosteroids may be necessary. When anaphylaxis occurs, the immediate problem is to relieve the intense bronchospasm and restore the depressed vasomotor tone. Epinephrine (1:1000) is the drug of choice, and it should be given subcutaneously; it should be used intravenously only if the condition of the patient is critical. Repeated subcutaneous injections of epinephrine may be necessary. If shock occurs, as evidenced by a severe decrease in blood pressure, the intravenous infusion of levarterenol (levophed) bitartrate, 4 mg. in 500 ml. of a 5 percent solution of dextrose, or the intramuscular injection of 10 mg. of metaraminol (aramine) bitartrate may be used. If bronchospasm continues, an intravenous injection of 3¾ to 7½ grains of aminophylline may be given extremely slowly and with caution, as it may aggravate any existing vascular collapse.

Penicillinase is effective in the treatment of acute reactions to penicillin.[46] This agent is a thermolabile protein enzyme secreted by Bacillus cereus, Escherichia coli and certain strains of staphylococci. It is capable of hydrolyzing circulating penicillin to the biologically and antigenically inert penicilloic acid in less than 1 hour after its injection.[47] However, since penicillinase is a foreign protein, reactions to it also may occur. For these reasons, it should not be used in trivial reactions to penicillin. Reported effects of penicillinase include weariness, malaise, drowsiness and various cutaneous rashes. Drug fever occurs in about 5 percent of cases, with an occasional increase in temperature as high as 103° F.[48] Anaphylaxis also has been reported.[49, 50] Deep intragluteal injections are recommended, since pain and tenderness at the site of injection are common. If the symptoms of the supposed reaction to penicillin do not respond within 24 to 48 hours after the injection of penicillinase, another cause for the symptoms should be searched for.

Summary

Antibiotics are potent drugs that are useful for the control and cure of many serious infections, but they are capable of causing a variety of reactions, some of which are potentially lethal. Most of the reported deaths in such reactions have resulted from anaphylaxis following use of penicillin. Aplastic anemia caused by chloramphenicol, while rare, has a high mortality rate. A number of cases of fatal staphylococcal ileocolitis have been reported following the use of antibiotics, particularly the tetracyclines. Bacitracin, neymycin, polymyxin B, kanamycin, amphotericin B, streptomycin and vancomycin are capable of producing renal damage. The vestibular division of the eighth cranial nerve may be affected by streptomycin and, to a lesser extent, kanamycin. The auditory division may be affected by neomycin, kanamycin, dihydrostreptomycin and vancomycin in descending order of the frequency of occurrence. Dihydrostreptomycin is particularly dangerous because of the insidious nature of the onset of the deafness and the long latent period. The incidence of serious toxic and allergic reactions to antibiotics can be reduced if a few simple prophylactic measures are followed.

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Where two discourse, if the one's anger rise, the
man who lets the contest fall is wise.—*Euripides*

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If a man does not make new acquaintances as he advances through life, he will soon find himself alone. A man, Sir, should keep his friendships in a constant repair.—*Samuel Johnson*

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Farmer's Lung Syndrome

This is an incapacitating respiratory syndrome occurring in farmers who have been chronically exposed to moldy forage. It may occur at any age.

The symptoms occur within a few hours after exposure to moldy dust and are evidenced by severe headache, general malaise, dyspnoea, cough, fever, shaking chills, hemoptysis.

X-rays show diffuse interstitial changes and a biopsy reveals evidence of acute interstitial granulomatous pneumonitis with epitheloid and giant cells in areas of patchy pneumonic density.

Its course may be chronic with recurring symptoms over many years. The acute episode subsides after three to seven days. Chronic dyspnoea may continue indefinitely.

It is thought to be due to an allergic diathesis caused by the sensitization to mold or their products. Adrenal steroid therapy has afforded symptomatic relief.

Silo Filler's Syndrome

This syndrome is somewhat similar to farmer's lung syndrome except that it is considered to be due to inhalation of nitrogen dioxide which may settle near the floor of a silo. The hazard is increased by high temperature.

It is characterized by severe pneumonitis and the symptoms develop during or immediately after exposure, causing faintness, sensation of constriction about the thorax, dyspnoea, coughing up discolored material and, in severe cases, fever, nausea, vomiting, abdominal pains, annorhexia, chills, and bloody sputum may develop.

The nitrogen dioxide fumes may be fatal to humans and animals and death may occur within a few hours after inhalation or it may be delayed for several days.

Immediate therapy, including the use of oxygen, and supportive treatment is recommended. Recovery may be slow and the completeness of recovery may be questionable, causing chronic pulmonary insufficiency.

The Role of Serotonin IN ANAPHYLAXIS and ENDOTOXIN SHOCK

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Despite notable advances made in the therapeutic management of allergic states (1) and in shock secondary to bacterial endotoxins (2) the basic mechanisms responsible for these abnormal states remain obscure. Thus the rationale of present therapeutic measures is not thoroughly understood, and attempts at better methods of management remain somewhat empirical. In a sensitized host antigens probably react with mast cells (3). It is now clear that antigen-antibody reactions activate an enzyme, or a series of enzymes, producing release of vasoactive substances, including serotonin, histamine, acetyl choline, heparin, and "slow reacting substance." Certain of these possible chemical mediators of the allergic response are liberated explosively from platelets directly into the circulating blood. Since all of the phenomena observed during anaphylaxis are not explained by histamine release (4), the liberation of serotonin from platelets recently has received much attention.

Anaphylactic Shock and Hypersensitivity States

Humphrey and Jacques (5) first demonstrated the release of serotonin from platelets suspended in plasma after the addition of an antigen-antibody complex. Subsequent studies by Waalkes and associates (6) showed that free serotonin and histamine appeared in the plasma of sensitized rabbits following the injection of specific antigen.

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Maximum levels of serotonin and histamine were reached in one minute and declined to control levels within two or three minutes. Their earliest determinations were made after 30 seconds, at which time an increase in free serotonin and histamine was apparent. Later studies (7) showed that reserpine injected intravenously into rabbits in the amount of 0.1 mg. per kg. caused a marked reduction of serotonin and histamine in the blood platelets, but not in the intestine. When sensitized rabbits were pretreated with 0.1 mg. per kg. of reserpine, an elevation of plasma histamine, but not of serotonin, was found after the injection of antigen. This suggested that histamine release occurred both from tissues and platelets, whereas serotonin was liberated chiefly from platelets. However, tissue serotonin might have been released, despite a failure to demonstrate its presence in the plasma. Later studies by Garcia-Arocha (8) clearly showed that a release of serotonin and histamine did occur into the perfusing medium when the rat small intestine was perfused with antigen. This finding is of interest in view of the release of serotonin from the small bowel which later was shown to occur after endotoxin (vide infra).

In addition to antigen-antibody complex (and endotoxin) glycogen has been shown to cause the release of serotonin and histamine from platelets when incubated with normal rabbit blood (9). When glycogen was injected intra-venously into rabbits a marked fall in whole blood serotonin was observed, together with a rise in the lung content of serotonin and histamine. Increased amounts of serotonin and histamine were found in the plasma, and the authors suggested that glycogen, or a polysaccharide like material, may be involved in hypersensitivity reactions. Platelets also disappear as a result of antigen-antibody interaction in humans (10) (very possibly with liberation of serotonin and histamine) and this change has been used as a test of hypersensitivity in man.

Studies by Parrat and West (11), and Rowley and Benditt (12) showed that serotonin was related to the skin sensitivity reaction in rats. Dextran and egg white were shown by these workers to cause the release of serotonin and histamine from skin tissue. The hypersensitivity reaction was prevented by depletion of skin serotonin, but was not prevented by depletion of skin histamine alone. Pre-treatment with serotonin blocking agents prevented the anaphylactoid reaction, whereas anti-histaminic agents produced only a slight modification of the reaction. These data are perhaps the most striking evidence of a possible role of serotonin in anaphylaxis, but it must be emphasized that only one target organ was involved, and there may well be a significant variation in responsiveness between different species. Such a species variation would seem to be well documented in the case of production of bronchiolar constriction in anaphylactic shock. Thus the guinea pig (and human) lung contains little if any serotonin, whereas mouse lung contains relatively large amounts. The concentration of histamine is reversed, with guinea pig lung containing relatively large amounts, and mouse lung relatively small amounts of histamine. (13). Thus lysergic acid diethylamide, an inhibitor of the action of serotonin on smooth muscle, protects against the anaphylactic response in the mouse. Antihistaminic agents may completely block the pulmonary effects of anaphylaxis in the guinea pig, but be totally without effect in the mouse.

Herxheimer (14) had ten subjects inhale 0.6% serotonin for 60 seconds in order to determine if serotonin was capable of producing clinical asthma. In four subjects who had no history of asthma no changes in pulmonary function or asthmatic symptoms occurred. Of the remaining six patients, who were chronic asthmatics in remission, three had a pronounced asthmatic attack and two had alterations in respiratory function but no asthmatic symptoms. Herxheimer's study provides a link between the animal studies implicating serotonin in anaphylaxis and human hypersensitivity studies. Further evidence is provided by the clinical studies of Gaynes and Shaw (15) and La Mantia et al (16) who reported excellent results in the clinical treatment of allergic pruritis and asthma with a drug possessing strong anti-serotonin activity. Since the drug used in those studies possessed other actions beside serotonin antagonism which might also modify allergic states the interpretation of the results obtained are not conclusive, but nonetheless suggestive.

Endotoxin Shock

The striking similarity of shock due to bacterial endotoxins and that due to anaphylaxis has been emphasized by Weil and Spink (17). In the experimental animal bacterial endotoxin rapidly alters circulatory hemodynamics (18), (19) which contributes to further physiological and morphological alterations (20) in the host.

Studies done by Thomas and associates (21) first suggested that serotonin played a role in the altered vascular reactivity following endotoxin administration. They found that compound 48/80, which produces depletion of serotonin and histamine in platelets and mast cells protected rats against lethal doses of endotoxin. Gilbert (22) later studied the effect of pre-treatment with various serotonin and histamine blocking agents, alone and in combination, on the initial pulmonary artery and systemic pressure responses to E. Coli endotoxin in the cat. These drugs did not significantly prevent the initial acute rise in pulmonary artery pressure after endotoxin, but did block the systemic hypotensive response to low doses of endotoxin. With larger amounts of endotoxin all of the drugs were ineffective in diminishing the hypotensive response to endotoxin.

In contrast to the beneficial effect of serotonin depletion noted by Thomas and associates, Gordon and Lipton (23) noted that serotonin pretreatment exerted a beneficial effect on mortality due to endotoxin in rats. Recent work has extended this observation, by effecting blockage of the destruction of endogenous serotonin (and histamine) by inhibition of monoamine oxidase activity. In these experiments mortality was significantly reduced when mice were pretreated with B-phenylisopropyl hydrazine, a potent monoamine oxidase inhibitor (24).

Armin and Grant (25) showed that catechol amine release occurred after injection of endotoxin in rabbits, and that minute quantities of a constrictor substance which caused an effect resembling the action of serotonin on the superfused rat uterus could be isolated from plasma five and fifty minutes after administration of endotoxin. Serotonin release into the circulating blood after endotoxin was first clearly suggested by Davis and associates (26, 27) and in-vitro studies with rabbit whole blood (28) showed that the blood platelets were a major site of release.

After the injection of a lethal dose of endotoxin in the dog a precipitous fall in the number of circulating platelets occurred: the platelet count fell to 1/5 of the control count only sixty seconds after endotoxin was injected. Serum serotonin concentrations showed a parallel but slower fall in the three vascular sites sampled, namely the portal vein, pulmonary and femoral arteries. Serum serotonin concentrations in the pulmonary artery and portal vein were significantly higher than in the femoral artery during the first minute after endotoxin, and free (plasma) serotonin concentrations rose slightly, with the highest level of plasma serotonin being observed in the portal vein. This finding suggested the release of serotonin from the known depot in the bowel, which was confirmed in later perfusion studies (29). These studies showed, however, that the bowel did not release massive amounts of serotonin, and fifteen minutes after injection of endotoxin into the perfusion system the concentration of serotonin in the mucosa of the small intestine showed little change. This finding undoubtedly explains, in part, the ability of the platelets to replenish their stores of serotonin sixty minutes after endotoxin (27). In vivo agglutination of platelets also was demonstrated, with pseudopod formation demonstrable fifteen seconds after endotoxin exhibition (at which time changes in serotonin concentrations had already become apparent) with extensive agglomeration of platelets, and virtual disappearance of platelets on stained smears sixty seconds after endotoxin. In vitro studies with incubation of rabbit blood also demonstrated that coincident with the agglutination and destruction of platelets which earlier had been shown to occur in vitro (30) and which was confirmed, there was a sharp fall in the platelet count with a significant increase in the plasma concentration of serotonin (28). The in-vivo release of serotonin into rabbit plasma after endotoxin also has been shown to occur (31). This explosive release in vitro, and in vivo, accounts for the low total blood serotonin levels reported in the rabbit five minutes after the administration of endotoxin (27).

Discussion

It is now apparent that many substances can produce anaphylaxis and the anaphylactoid reaction (17) and that subsequent hemodynamic and chemical changes, subject to species variation, are strikingly similar regardless of which large molecular weight substance produces the reaction. Although serotonin and histamine clearly are released from platelets, intestine, skin, and possibly other tissues, and histamine is released from the liver in anaphylaxis (34) the exact role of these substances remains to be determined. Studies to elucidate this role are currently underway in our laboratories. It is clear, nevertheless, that release of serotonin is almost immediate after a lethal amount of endotoxin is liberated into the circulation, and that these vasopressor substances are released simultaneously with the hypertensive response in the portal and pulmonary vascular systems, as well as at the time of the initial systemic hypotensive response.

The possibility that altered reactivity to catechol amines may be an important factor in the lethality of endotoxin, and that changes in serotonin concentration may be responsible for the alteration has been suggested (35). Recent work (25, 32, 33) has shown that an elevation of catechol amine concentration in the plasma exists after endotoxin administration, and although the rapidity of release has yet to be determined (32, 33) all groups are in accord in finding elevated levels of catechol amines in the plasma after a delay of one or more hours following endotoxin. Since the platelet content of catechol amines is relatively small (36) platelet destruction, which is almost immediate, would not markedly elevate plasma catechol amine levels, and the reported elevations almost certainly are secondary to adrenal release of catechol amines. Because serotonin has an effect which is antagonistic to the action of noradrenalin on small vessel smooth muscle, (37) the suggestion has been made that the low total blood serotonin levels found after endotoxin administration might cause an augmented reactivity to epinephrine and norepinephrine (32). It remains to be determined, however, if free serotonin levels also are low at the effector organ, since unbound (platelet free) serotonin is believed to be the biologically active form (38) and only increases in the free form of serotonin have thus far been found after endotoxin.

Summary

Investigations of the release of serotonin in anaphylaxis and in the anaphylactoid response secondary to administration of E. Coli endotoxin have revealed a striking similarity between the two states. The response to endotoxin is that of precipitous platelet agglutination and destruction, with release of serotonin which is rapid, and coincides temporally with the initial pressure changes observed in the intact animal. Numerous other experimental examples have been cited which suggest that serotonin may play a role in anaphylaxis and endotoxin shock. The precise nature of this role has yet to be determined, and as yet there is no certainty that serotonin is implicated in anaphylaxis or in shock secondary to bacterial endotoxins in man. Nonetheless it is hoped that further investigation will provide clearer insight into the problem of the pathegenesis of these states, and thus lead to more effective therapeutic management.

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DUES — DELINQUENCY: A SYNDROME

A phenomenon, noted by all organization treasurers, has been called the Dues—Delinquency Syndrome. Its characteristics include persistent non-payment of legitimate obligations by an otherwise completely normal individual. Sometimes the condition is chronic. Then the only treatment is major surgery. More commonly it is acute or intermittent and responds to repeated nudges, hints and reminders. This form of therapy actually causes signs and symptoms in the treasurer also, who, incidentally, has had the disease in the past.

The Dues—Delinquency Syndrome can be completely eradicated by the prompt payment of the outstanding obligation. It is devoutly to be wished that any reader who suffers from this syndrome treat it immediately.

S. O. Waife, M. D.
Bull. Am. Med. Writers Assn., Aug. '61

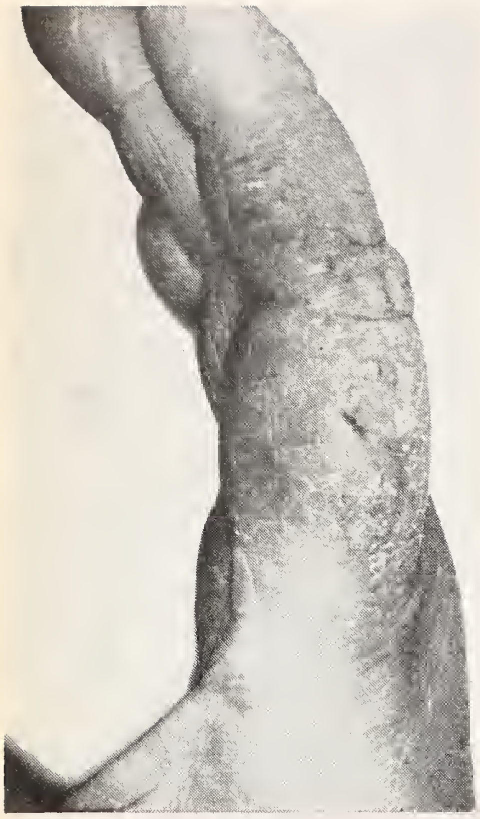
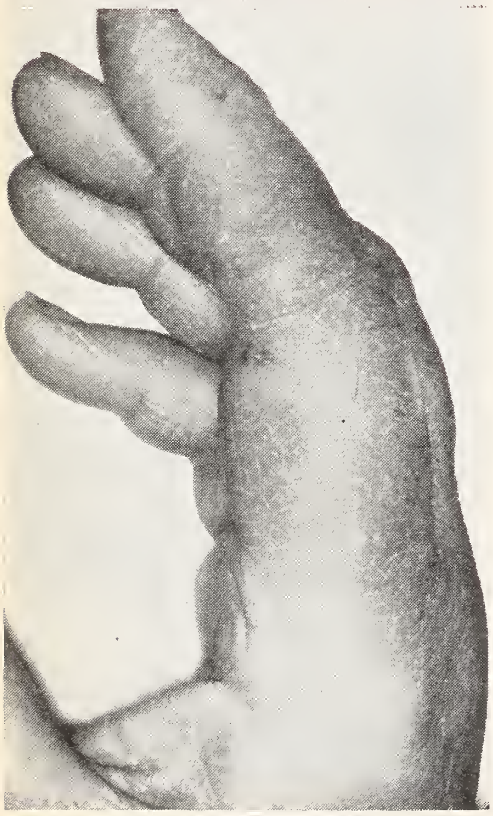


Fig. 1
Tinea manus

Fig. 2
Tinea manus (same patient as fig. 1)
Treated with Griseofulvin for 52 days



Griseofulvin

THE NEW ANTIMYCOTIC agent known as Griseofulvin* was first isolated in 1939 from Penicillium griseofulvum. This material has also been isolated from Penicillium Janczewski and Penicillium patulum. Because it demonstrated no antibacterial properties, continued study of this material as an antibiotic was discontinued until 1947 when it was observed to have an antifungal action. It has since been used widely in infections in plants and animals (other than humans). Gentles reported the first successful management of experimental ringworm in animals in 1958.[1] Williams and Riehl reported the successful administration of this material in humans in 1958.[2,3] In 1959, Blank was the first to announce its use in human infections in the United States.[4] Reports of many studies have since appeared in the literature.[5] This drug has been effective in the treatment of mycotic infections due to the species Trichophyton, Microsporum, and Epidermophyton.

This clinical study is reported to acquaint Minnesota physicians with our experience and to point out any side effects experienced in use of the drug.

Eighty-one patients with clinical mycotic infection were treated with Griseofulvin. In all cases a (KOH) direct examination and/or a culture was performed in an attempt to identify the organism but in some instances no specific fungus was isolated. The patients are grouped according to the clinical diagnosis. (see Table 1)

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*The Griseofulvin used in this study and the cost for necessary laboratory studies were provided by Ayerst Laboratories Incorporated.

in the Treatment of Dermatomycoses

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Tinea capitis: There were six patients in this group, five having positive cultures. Three patients were infected with Microsporum canis, one with Microsporum audouini, and one with Trichophyton mentagrophytes. In all six patients, the eruptions cleared completely in 4 to 20 weeks. In one case the treatment was intermittent with a 3-week lapse. Use of the drug was discontinued by the patient without consulting the physician, because of what was described as stomatitis. This lapse in treatment lead to prolonging the duration of treatment to 20 weeks. One patient had a kerion reaction (Kerion Celsi) which cleared very rapidly in 2 to 3 weeks.

Tinea pedis: There were eighteen patients in this group. Ten had positive cultures (three, Trichophyton rubrum and seven, Trichophyton mentagrophytes). In three additional patients direct examination of cutaneous scrapings demonstrated fungi. The eruptions in eleven patients cleared completely in 6 days to 6 weeks. Six improved markedly over a period of 2 to 6 weeks. The eruption of one patient responded poorly. He had an acutely weeping, severely inflamed infection. Because he was hospitalized for a surgical problem, he was then treated with wet compresses. Even then, his eruption was slow to improve.

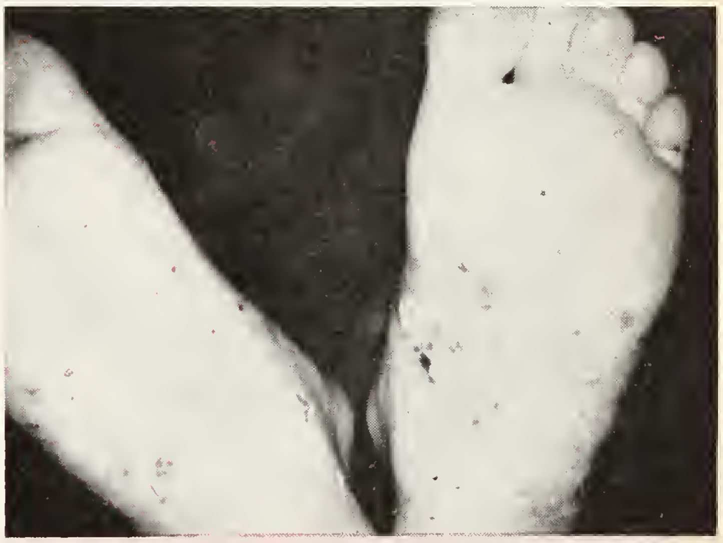
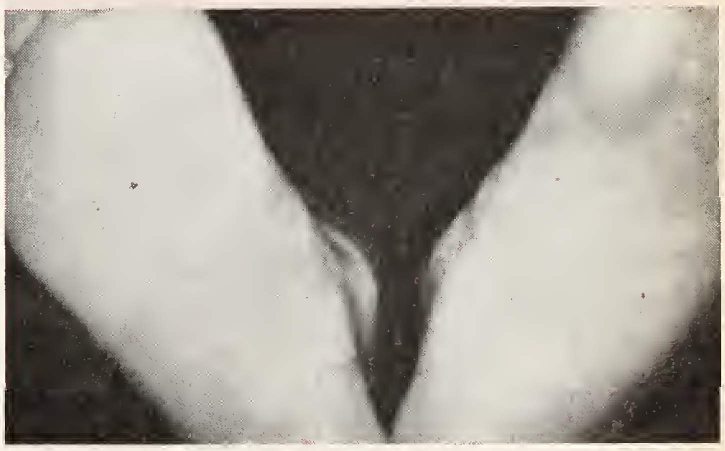


Fig. 3
Tinea pedis

Fig. 4
Tinea pedis (same patient as fig. 3)
Treated with Griseofulvin for 30 days



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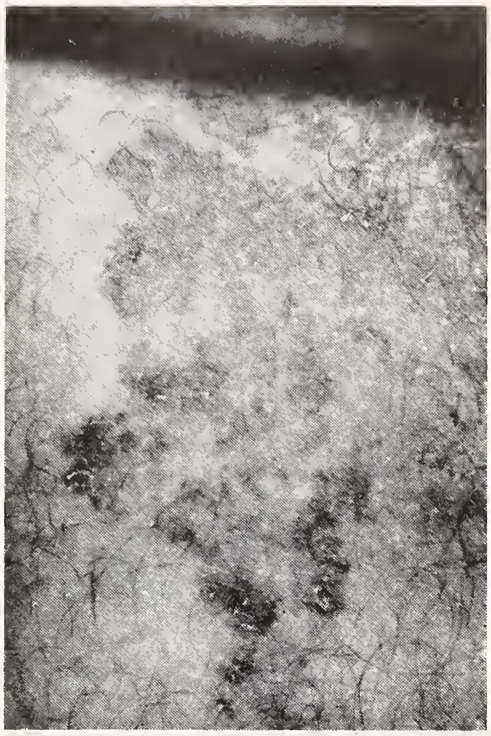

Fig. 5
Tinea corporis

Fig. 6
Tinea corporis
Treated with Griseofulvin for 52 days

Tinea corporis: There were ten patients in this group with only three having positive cultures (one, Trichophyton mentagrophytes and two, Trichophyton verrucosum). One other patient had positive findings on direct examinations of scrapings. In five patients the eruption cleared completely in 2 to 21 weeks. The remaining five had improved when last seen. The duration of treatment in the latter group had been 1 to 6 weeks. Pruritus was reduced in 48 to 72 hours in most instances.

Tinea cruris: In this group there were eight patients. Five positive cultures were obtained (three, Trichophyton rubrum and two, Trichophyton mentagrophytes). The eruption in five patients cleared completely in 2 to 6 weeks. The remaining were improving when last seen.

Onychomycosis: Of the eight patients in this group, four had positive cultures (three, Trichophyton rubrum; one, Trichophyton mentagrophytes; and one, Epidermophyton floccosum). As one would expect in this group, the response to treatment was very slow. Improvement was noted after 2½ weeks. In none was the infection completely cleared after 24 weeks of treatment. In this type of infection, improvement is noted first at the base of the nail by the growth of a new healthy nail. The infected portion of the nail is slowly extruded as new growth occurs, until it is replaced by new growth; hence the long duration of treatment. It is possible that surgical removal of infected nails might hasten cure.

Combined infections: The group comprised the largest number of patients. Included were patients with various combinations of infections; i.e., nails, palms, feet, and anogenital areas. From the 31 patients ten positive cultures were obtained (five, Tricophyton rubrum; four Trichophyton mentagrophytes; and one, Epidermophyton floccosum). In three other instances the direct examination of scrapings demonstrated mycotic infection. The eruption in eight patients cleared completely in 3 days to 7 weeks. Twenty-three were improving at 1 to 30 weeks when last seen. The rate of improvement was related to the site of involvement. As was expected, the patients having nail involvement required treatment for much longer periods, long after co-existing infections at other sites had cleared.

Dosage: The optimum dosage schedule for this drug has not as yet been determined. In this series, the dosage in children varied according to age, from 125 milligrams 3 times daily to 250 milligrams 3 times daily. In all instances these doses were adequate.

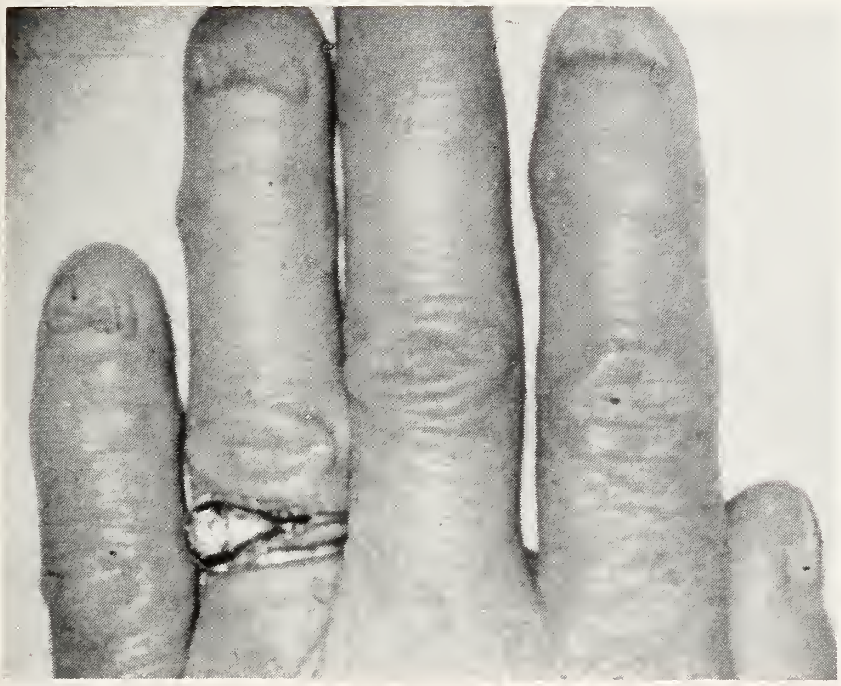

Figure 7—
Onychomycosis

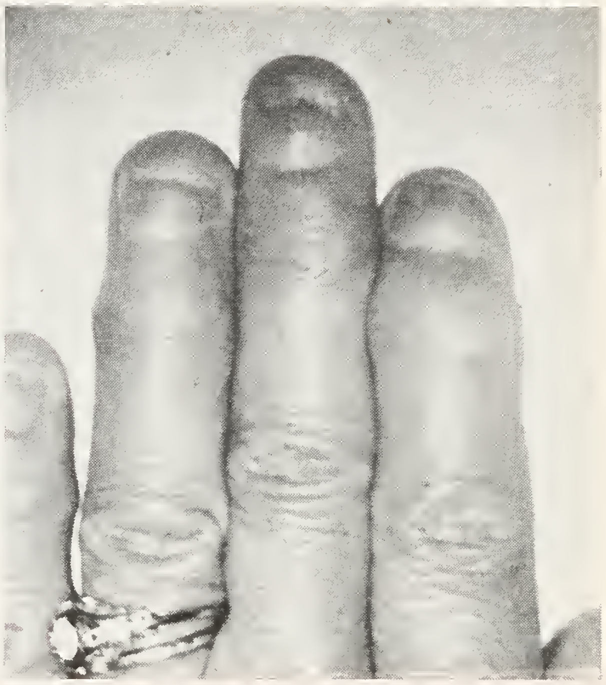

Figure 8—
Onychomycosis
Treated with Griseofulvin for 2½ months

Some attempts were made to vary dosage in the adult. In most patients the starting dosage was 250 milligrams 4 times daily. When this dosage was maintained, no relapse of infection was noted. In some instances, particularly in patients having onychomycosis, the dosage was decreased to as little as 250 milligrams 1 time daily. In four patients, a flare of the infection occurred necessitating an increase in the intake of the drug. In all instances the infection was again controlled by the higher dosage but total duration of treatment was therefore extended.

Side effects: In this series no side effects were found which were serious enough to warrant the discontinuation of the drug. In two patients stomatitis occurred. One patient noted "sores" in her mouth 2 weeks after the start of the drug. This was not seen by her physician and because her infection was completely cleared she did not take any more of the drug. Her stomatitis cleared uneventfully. In one other patient "stomatitis" occurred after 2 weeks of therapy. The drug was discontinued by the patient and no lesions were seen when she was examined by her physician 1 week later. Because she still had active infection, the drug was re-instituted after a three-week lapse without any recurrence of mouth lesions.

No instances of altered blood counts or changes in the urine were encountered.

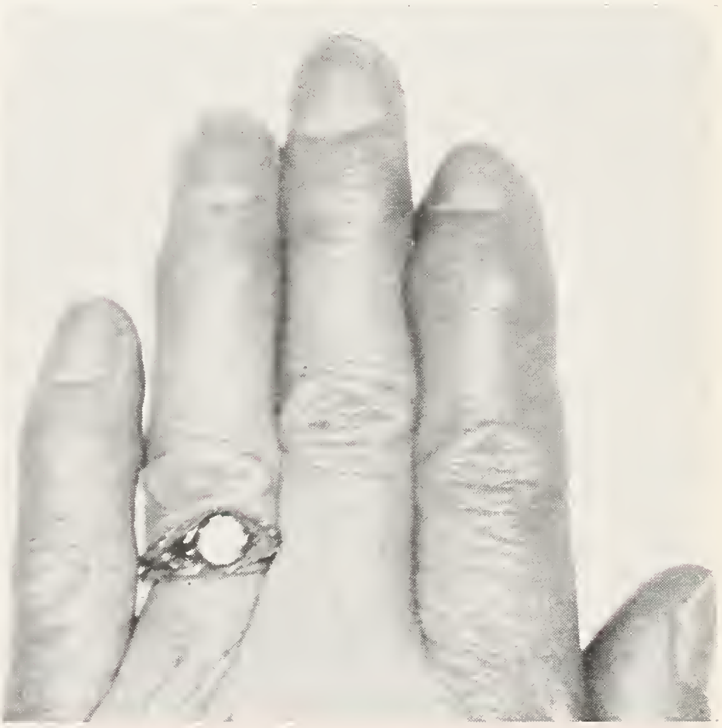

Figure 9—
Onychomycosis
Treated with Griseofulvin for 7 months

Discussion

Griseofulvin, an orally administered fungistatic agent, has been shown to be effective in the control of mycotic infections of the skin, hair, and nails. The application of this drug is not limited to the management of chronic mycotic infections for it is also of value in the management of the acute inflammatory type of infection.

Because the action of this drug has limitations in the treatment of the superficial fungous infections, it is suggested that, where possible, the identification of the organism be established prior to use by microscopic examination in potassium hydroxide solution or by culture. The drug is totally ineffective against the organisms of the Candida family; therefore, in the case of infected nails it must be established clearly that such infection is due to members of the genera Trichophyton, Epidermophyton, or Microsporum and not to Candida. Differentiation of disease of the nails and paronychia which resemble fungous infections must also be clarified prior to the use of this drug.

The drug can be given without risk and few patients show any form of intolerance. Infections of the glabrous skin respond most rapidly. Infections of the hair responded less dramatically. However, the drug has great use in these situations, where we can at last feel assured we have a method of curing the chronic and recalcitrant infections.

To treat onychomycosis adequately, one must administer therapy for periods of at least four months in the case of fingernail infections and up to seven and eight months in the case of infections of toenail. Periods of treatment are further shortened in the more youthful patient. Some observers believe that not all chronic eruptions can be completely cured even by the use of Griseofulvin plus the use of local fungicides.

Use of the drug does not impart permanent resistance of the skin, hair, or nails to reinfection.

TABLE I
RESULTS OF THERAPY

			Morphology			Response		
Clinical Form	No.	Identification	Acute-Duration of less than 4 wks or with acute inflammation	Chronic-Eruption of longer standing than acute & without acute inflammation	Dosage	Compl. Clear	Improved	Poor
Tinea Capitis	6	3-M. canis 1-M. audouini 1-T. mentagrophytes	4	2	From 125 mg. 3 times daily to 250 mg. 3 times daily varying with age of the patient	6		
Tinea Pedis	18	3-T. rubrum 7-T. mentagrophytes 3-+KOH only	6	12	250 mg. 4 times daily. In some instances after several weeks of improvement dose was diminished in a stepwise manner	11	6	1
Tinea Corporis	10	1-T. mentagrophytes 2-T. verrucosum 1-+KOH	2	8	Same as for T. pedis	5	5	
Tinea Cruris	8	3-T. rubrum 2-T. mentagrophytes	4	4	Same as for T. pedis	5	3	
Onychomycosis	8	2-T. rubrum 1-T. mentagrophytes 1-E. floccosum		8	Same as for T. pedis		8	
Combined infection including combinations of onychomycosis, T. pedis, T. corporis, etc.	31	5-T. rubrum 4-T. mentagrophytes 1-E. floccosum 3+KOH only	6	25	Same as for T. pedis	8	23	
Totals	81		22	59		35 (42%)	45 (57%)	1 (1%)

It has long been a mystery why some individuals are more susceptible than others to mycotic infections. This lack of resistance falls in three general categories: (1) local predisposing factors, (2) systemic predisposing factors, (3) combinations of 1 and 2. In this series there were four patients in the first; they had familial hyperkeratosis of the soles. Their initial mycotic infection responded well to Griseofulvin but in three of these patients there was recurrence of infection three months later; perhaps intermittent therapy is justified under such circumstances even though not truly curative. This recurrence also responded to Griseofulvin. Perhaps all patients who become infected with a fungus fall into the second category. However, some of the extreme examples are patients with Cushing's disease, lymphomas, reticuloses, and diabetes, none of which was present among our patients. Use of this drug for long periods of time seems to be without unusual risk or hazard.

Summary

Griseofulvin has been established as an effective drug which may be used in the treatment of superficial fungous infections of the skin, hair, and nails. The results of treatment in 81 patients have been reported in this paper. Comments regarding the limitations of this drug as well as the side effects and the observations relative to dosage schedules, etc. have been reported.

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Your opinions are sought as "Letters to the Editor." Any signed letter will be considered if it is beneficial to the medical practice as a whole. The opinions expressed in this section do not necessarily represent the opinions or policies of MINNESOTA MEDICINE or the Minnesota State Medical Association.

* * *

The mind that needs to know all things must needs at last come to know its own limits, even its own nullity, beyond a certain point.—D. H. Lawrence

What you are sounds so loudly in my ears I cannot hear what you say.—Emerson

* * *

Our own minds, being narrow and contracted, we cannot extend our conception of the variety and extent of nature, but imagine that she is as much bounded in her operations as we are in our speculations.—David Hume

Tuberculin Testing

— — in Pennington County — —

N. R. WHITNEY, M. D.*
Rapid City, South Dakota

"ARE MY CHILDREN being exposed to tuberculosis in school?" This question has been asked by many thoughtful parents and teachers in Pennington County. The reason for concern is that many Indian families coming from the Cheyenne River, Rosebud, and Pine Ridge Reservations of western South Dakota, where tuberculosis is known to be widespread, have come to Rapid City, bringing with them many children of school age. Because this question has arisen, tuberculin testing as a mass survey procedure has been carried out among children in the Rapid City and Pennington County school systems during the past three years.

Tuberculin testing is accepted as the safest and least expensive method now available of finding the early asymptomatic cases of tuberculosis. Finding cases before they become symptomatic is important from both the clinical and public health standpoints. The clinical reason is that satisfactory treatment can be accomplished much more quickly if the disease is discovered early. The public health reason is that if the patient can be recognized and isolated before he begins to discharge tubercle bacilli into his environment, he may be kept from becoming communicable.

The procedure used in Pennington County was to offer to each student in the selected grades the opportunity of having tuberculin skin testing done and also offer the tests to all adults working in the schools. During the first two years grades 1, 3, 5, and 12 were tested. In 1960 the children in grades 1, 6, and 11 were tested. Testing was done by the Mantoux method, using second strength PPD. In doubtful cases retesting was done. In positive cases the individual was referred to the family physician for further follow-up.

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* Pennington County Health Officer

This paper was presented at the fall meeting of the Northwestern Pediatric Society at Bayport, Minnesota, September 23, 1960.

The Pennington County Health Department and the Rapid City school nurse office both recommended that all children with positive reactions should have chest X-rays and the family should be followed with tuberculin testing or chest X-rays as deemed adviseable. I should emphasize, though, that this was merely a recommendation and that the Health Department had no jurisdiction in going farther. However, each positive reactor was asked to have his physician fill out a statement of the follow-up work done and to return it to the Health Department.

A total of 11,075 students were tested during the three-year period. Of these 2.2% were positive. In the Rapid City public school system 3,000 students were tested the first year and 3,200 the second year, with slightly less than 1% positive each year. No further breakdown is available on these figures. During the third year 1,572 students were tested in the Rapid City public school system, with 4.5% positive. Further breakdown is shown on the accompanying tables. In the county schools the following results were obtained:

> 1958—1,245 white students, with 1.6% positive; and 21 Indian students, with 30% positive.
>
> 1959—1,249 white students were tested, with 0.6% positive; 2 Indian students, with 15% positive.
>
> 1960—690 white students were tested, with 9.6% positive; 17 Indian students were tested, with 35% positive.

It is of further interest that of the students offered the test in the county in 1959, 13% refused the test. Comparable figures in 1960 are: 21% for the county schools and 32% for the city schools. Further breakdown of the figures is shown on the accompanying tables.

1958 - 1959 TUBERCULIN TESTING IN SCHOOLS

GROUP	CITY 1958	CITY 1959	COUNTY 1958	COUNTY 1959	DOUGLAS 1958	DOUGLAS 1959	TOTAL
White	316 Tested 5 Pos. (15%)	299 Tested 0 Pos.	612 Tested 8 Pos. (1.3%)	526 Tested 7 Pos. (1.3%)	317 Tested 7 Pos. (2.2%)	324 Tested 0 Pos.	2,394 Tested 27 Pos.
Indian	12 Tested 4 Pos. (33%)	13 Tested 0 Pos.	7 Tested 2 Pos. (28%)	6 Tested 3 Pos.	2 Tested 0 Pos.	1 Tested 0 Pos.	41 Tested 9 Pos.
Other—Non-White	1 Tested 1 Pos.	2 Tested 0 Pos.	4 Tested 0 Pos.	None	12 Tested 2 Pos.	12 Tested 0 Pos.	31 Tested 3 Pos.
TOTAL	329 Tested 10 Pos.	314 Tested 0 Pos.	623 Tested 10 Pos.	523 Tested 10 Pos.	331 Tested 9 Pos.	337 Tested 0 Pos.	2,466 Tested 39 Pos.

1960 TUBERCULIN TESTING

GROUP	RAPID CITY PUBLIC	RAPID CITY PAROCHIAL	DOUGLAS	COUNTY	TOTAL
White—First Grade	761 Tested 9 Positive	86 Tested 3 Positive (3.5%)	81 Tested 12 Positive (15%)	165 Tested 5 Positive (3%)	1,093 Tested 29 Positive
White—Sixth Grade	529 Tested 16 Positive	73 Tested 5 Positive (6.7%)	61 Tested 23 Positive (38%)	109 Tested 5 Positive (5%)	772 Tested 49 Positive
White—Eleventh Grade	230 Tested 30 Positive 13%	28 Tested 4 Positive (14.3%)	None	56 Tested 7 Positive (12%)	314 Tested 41 Positive
Indian—First Grade	20 Tested 2 Positive	None	None	2 Tested 2 Positive	22 Tested 2 Positive
Indian—Sixth Grade	12 Tested 6 Positive	3 Tested 0 Positive	None	1 Tested 0 Positive	16 Tested 6 Positive
Indian—Eleventh Grade	None	None	None	None	None
TOTAL	1,552 Tested 63 Positive	190 Tested 12 Positive	142 Tested 35 Positive	333 Tested 17 Positive	2,217 Tested 127 Positive

No new cases of tuberculosis were found among the positive reactors nor among their families. . Two Indian children were known to have had BCG injections in the past, and there were previously known cases of tuberculosis in families of some of the other children showing positive reactions.

It is interesting to compare these figures with other series that have come to my attention; particularly in the surrounding Indian reservations, the instance of positive reactors is much higher than it is in Rapid City. Through the courtesy of Dr. Lewis E. Patrie of Pine Ridge Hospital on the Pine Ridge Reservation, South Dakota, I have the following figures:

> 1,714 school children received tuberculin tests during the school year 1959-1960, and in this group 279 or 16.3% were positive.

Through the courtesy of Mr. Robert K. Reed of the Area Indian Office at Aberdeen, South Dakota, the following results were obtained:

> Pine Ridge Hospital showed 19.6% positive among school children in the spring of 1958, and 20.3% in 1959.
>
> School children on the Rosebud Reservation, South Dakota, showed 32.1% positive in 1958, and 9.4% in 1959.
>
> School children at the Cheyenne River Reservation in South Dakota showed 18.5% positive in 1958.

Braun in 1957(1) published the following results from children in a high instance area of Chicago. In two groups of white children in out-patient clinic populations he found 4.45 and 8.8% respectively, and among the Negro children in the same group he found 13.0% and 11.7% positive. In addition, he found 11.8% positive reactors in an all-Negro population of school children in the same area of high instance.

Dr. J. Arthur Myers reported in 1955(2) the following percentages among school children in Minneapolis:

> 47.3% in 1926; 18.9% in 1936; 7.7% in 1944; 3.9% in 1954.

A few conclusions seem warranted at this point in our survey. Certainly there is no evidence that any of the school children, White, Indian, or Negro, have active tuberculosis, and therefore the school children are not in any obvious danger of being infected with tuberculosis while in school. On the other hand, there is also definite evidence that school children are coming into contact with tuberculosis from time to time, and efforts should be continued to find such communicable patients and bring them under treatment. With this particular goal in mind, this study is being continued.

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(2) Myers, J. Arthur; Gunlaugson, Frederick G.; Meyerding, Edward A.; and Roberts, Jean: "Importance of Tuberculin Testing of School Children." Twenty-eight-year Study. The Journal of the American Medical Association, Vol. 159: pp 185-190, Sept. 17, 1955. Abstracted in Year Book of Pediatrics, 1956-1957 series, pp 128-129.

FIRST ANNUAL "MINNESOTA MEDICINE" LECTURESHIP

You are invited to attend the lecture on medical writing on October 26, 1961. This is to be held at the University of Minnesota Medical School—in the Mayo Memorial Building — Speaker: James P. Grey, M. D.

A free booklet on medical writing will be given to all doctors in attendance.

Abstracts and Briefs

SPINAL FLUID PROTEIN

Twenty percent of diabetic patients without evidence of vascular or neurologic disease have elevated spinal fluid protein, 150-100 mg. percent, while 40% of diabetic patients with evidence of such complication have elevated spinal fluid protein, usually 50-100 mg. percent, but occasionally to 150 mg. percent.

Studies with the starch gel method of electrophoresis showed that the slow 2-globulin was relatively increased in those patients with vascular complications. Since this fraction is prominent in the serum and is increased in meningitis the authors speculate on a defect in the blood-brain in such cases.

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Rochester, Minnesota

Kutt, H. L., Hurwitz, J., Ginsburg, S. M., and McDowell, F.: Cerebrospinal Fluid in Diabetes Mellitus. Arch. of Neurol. 4:31-36 (Jan.) 1961.

TREATMENT OF LOCALIZED LYMPHOMAS

An extensive review has been assembled covering the historical aspects of approaches to therapy in localized lymphomas, primarily from the comparative standpoint of surgical versus radiation therapy. The literature recording the experience of all prominent investigators in the field is evaluated with a presentation of the varying philosophies of management.

The data relates to all cases of malignant lymphoma seen at George Washington University Hospital in the period of 1947 to 1960. Statistics are evaluated for those patients having localized disease. The criteria for localization were: disease clinically confined to either one lymph node, one lymph node group, a single viscus, or a single area of localized soft tissue or bone. Each patient had a normal chest X-ray, normal results of blood and urine studies, and no systemic signs and symptoms. Fifty-four or twenty-five per cent of 214 patients with lymphoma were considered to have clinically localized disease by these criteria at the time treatment was started.

The treated groups were considered comparable with regard to operability as well as histologic types. Twenty-two of thirty-one patients treated by surgical removal of disease are living and well compared to two of twenty-three patients who received only roentgen ray therapy. Two of the thirty-one surgically treated patients also received radiation therapy. The group most successfully treated consisted of patients with lymphomas of the peripheral lymph nodes treated by total excision. Here the five year survival rate was 90%. A comparable group treated by radiation had a 19% five year survival. The authors felt the evidence was suggestive that non-radical operations, provided there was complete removal of all lymphomatous tissue, may achieve cure as readily as more radical procedures.

The place of post-operative irradiation could not be evaluated from the present study, but from the data available, it would appear that patients receiving post operative irradiation fared no better than those who did not.

The authors, in critically assessing their data, mention that the total radiation dosages employed may have been less than that used by others in the field who have reported greater success. They recognize that the series is small and that control patients are not available for comparison. Also, the time element has not been well controlled, since the surgically treated patients without radiation were treated an average of 45 months ago compared to an average of 74 months in the surgical patients who received roentgen ray therapy. Thus, the passage of more time may alter the apparent results observed today.

Radiation therapy has earned well deserved laurels as an extremely efficacious agent for management of the lymphomas. The data presented, however, would seem to favor the surgical approach to the management of the non-disseminated variety in this malignancy. In the appropriate circumstances, surgical management should probably be more generally employed as the therapy of choice, just as total extirpation is usually regarded as the treatment of choice for most early carcinomas.

Robert N. Hammerstrom, M. D.
Minneapolis, Minnesota

"The Value of Surgical Removal of Localized Lymphomas" Smith, D. F., and Klopp, C. T. Surgery, 49:469, April, 1961.

Book Reviews

OPTICS: AN INTRODUCTION FOR OPHTHALMOLOGISTS — Kenneth N. Ogle, Ph.D., Springfield, Illinois, Charles C. Thomas, 1961. 265 pages, chapter references, index, numerous black and white diagrams. Price: Not stated.

This well-illustrated volume by the Professor of Physiological Optics of the Mayo Foundation has been prepared to meet the needs of the student ophthalmologist in his preparation for study of the refraction of the eye and as a background for the understanding of physiologic optics. After the physical and mathematical aspects are systematically developed, their application to the function of clinical ophthalmic instrumentation in common use is clearly presented. Each chapter is followed by representative practical exercises.

William S. McClanahan, M. D.
(U. S. Army)

THE HOUSE OF HEALING — Mary Risley, Doubleday & Co., Inc. 1961
Price: $4.50

This is the story of the hospital from Babylon, Egypt, Greece, and Rome to the great medical centers of today.

The author has done a very fine and complete job of informing her readers through an interesting and graphic description of hospitals from Sumer, Circa 2,000 B. C., up to our present mid-twentieth century, a span of some 4,000 years. As we read, we run through a gamut of emotions: from righteous indignation to profound pity to high admiration.

First, ideology motivating the care of the sick was almost purely voluntary humanitarianism; then came the Dark Age of medicine during the late 17th, 18th and early 19th centuries, when the brutal doctrine of early Protestantism prevailed; Namely, that illness were either retribution for sin or possession by devils; finally there was a return to humanitarianism: that of the present era with its sense of civic duty toward one's fellow man — the full cycle showing us moderns to be more brothers in spirit with the Egyptians, Greeks, and Romans than with our Reformation forebearers.

The temples provided the earliest housing for the sick, who came to sue for aid from their pagan gods through the intercession of their priests, and remained either to die or to recover. Later, Roman army hospitals became the fore-runners of our modern hospitals caring for the sick and disabled. Next, the early Christian era saw the rise of monastic hospitals during the period of dedication to the care and alleviation of illness by monks and nuns, one of the most important Catholic orders being that of St. John, which still survives. Still later, voluntary hospitals, supported by private funds, were established, supplemented comparatively recently by Government hospitals, which, incidentally, now own 70% of the hospital beds in the U. S.

Architecturally, the hospital evolved from the temple through the earlier block and later pavilion style up to the giant medical center of today.

The great medical school and hospital at Salerno during the Middle Ages was followed by the Santo Spirito at Rome, St. Bartholomew's in London, and Hotel-Dieu at Paris; the latter three still operating after 1,000 years, having survived wars, plagues, and revolutions.

We are surprised and gratified to learn how relatively enlightened the ancients were, in spite of their almost total ignorance of drugs, antisepsis and bacteriology. Hygienically they emphasized fresh air, sunlight, cleanliness, pure water, nourishing food, and cheerful surroundings. For anesthesia they employed opiates such as narcotics from Indian hemp. Penicillin was even fore-shadowed in the use of fresh mold mixed with yeast for the treatment of wounds; and for the prevention of infection wine-soaked cloths were applied with amazingly successful results and with far fewer fatalities than occurred during the later Dark Age of Medicine . . . when the most appalling practices prevailed, with patients lying huddled and naked on filthy straw, new born and dying together, with convicts, vagrants and drunks constituting the nursing staff under compulsion and with doctors casually and habitually wiping their instruments on their coat-tails, one doctor's jacket being so stiff that it could stand alone.

One example that struck the reviewer forcibly and touched her deeply: the Augustinian Sisters of the Hotel-Dieu washed all the soiled hospital linen in the River Seine, even breaking the ice in water to stand knee-deep in the freezing water, and often persisting at the endless task until far into the night. Such dedication seems unbelievable and almost excessive to us today; we find so little now to equal it.

Today's hospital picture is fairly familiar to most of us, including as it does, expert medical training in many fields, the study of hospital administration.

In this review it is impossible to do the whole book justice; therefore the reviewer urges others to read for themselves this fascinating history of hospitals.

E. G. R.
Minneapolis, Minnesota

THE CARDIAC ARRHYTHMIAS. A GUIDE FOR THE GENERAL PRACTITIONER — Brendan Phibbs. C. V. Mosby Co., St. Louis. 1961. 128 pages
Price: $7.50

Dr. Phibbs has collected a large series of arrhythmias which are well illustrated throughout the text and in a series of interesting exercises in the appendix. He writes, as it were, from the podium; no doubt the chapters originated as lectures to medical students. He has drawn upon his own experience quoting other works formal reference to other authors..

Minneapolis, Minnesota
Reuben Berman, M. D.

President's Letter

THE HOSPITAL OF TODAY

What does a doctor say to a community when he gives the dedicatory address at the opening of their new hospital? I was given that opportunity recently at a ceremony which opened up a new modern hospital of 44 beds at Fosston, Minnesota. I should like to give you excerpts of that talk, not so much for your approbation, but perhaps to stimulate a re-evaluation of the responsibilities a community has when it sets a hospital in its midst.

A hospital is a symbol of a community's self-reliance; an expression of that community's pride to care for its own. The need for a hospital in a community must be first established. There is no satisfaction to supply something not needed, for then it is no longer a symbol of need, but only a useless expression of a desire to have what the neighbors have.

The magnitude of hospitalization strikes home when you realize that in every minute of the day and night, 44 Americans on the average become hospital patients. Does that statement indicate over-utilization of hospital services? While this concern with rising hospital usage is valid as far as it goes, the evidence shows that the overwhelming bulk of hospital care is justified; that it is associated with the vast improvement in both the quality and quantity of medical care being provided for the American people. The rise in over-all hospital costs over the past 15 years is only 5% the result of the utilization factor, and the other 95% is the result of the rise in the cost of a day of care. Remember that for every dollar you see on your hospital bill, the hospital administrator pays out 70 cents for labor.

Many must share the responsibility to maintain a hospital as an active symbol of self-reliance and individualistic determination. This responsibility, as I see it, rests upon a foundation in the shape of a triangle. The sides of the triangle are made up by the hospital and medical staffs, respectively; the base upon which this triangle of responsibility rests is the community.

What are some of these factors in a community's responsibility. The people have invested and must continue to invest in this "Heritage of Health." This investment is in the form of gifts; in work; and in continued interest. It is necessary to form a working partnership between the hospital and the community, if its health is to be maintained at the present high level. The community must realize that a hospital could not and cannot meet the community's health needs without that community's support and understanding. The community's role in this partnership is its direct tie-up with the hospital through its hospital governing board, composed of the community's civic leaders. A community must encourage young people to enter health careers. The members of a community must volunteer their services to work in the hospital as members of the Ladies Auxiliary or Grey Ladies Groups. Lastly, but by no means finally, members in a community should hold membership in a prepayment plan for both hospital and medical coverage.

How about the hospital's responsibility? It must bear its share so that this triangle of responsibility will not be weakened. It must avoid sub-standard care. It must protect the patient in every way. It must furnish as well-trained an administration, nursing and lay staffs as possible. Its governing board should be chosen wisely. The hospital must be a physical plant with the minimum of hazards. It should train and develop a corps of volunteers, so necessary in a time of nursing shortage. The hospital must remember that it is here to serve the community, and not become complacent on the basis that a community could not survive without it.

To complete the triangle, the doctors of a community must also accept their share of the responsibility to allow this "Heritage of Health" to reach its full potential. He must acknowledge his full responsibility and accept the hospital restrictive regulations. These at times may irk him, as an individual; but collectively, they are dictated for the best interests of all. He must contribute unselfishly of his time and money beyond the call of duty. He has and he will. Doctors, individually, and as a group, are forever trying to deliver the best medical care possible. The public as a whole does not seem to realize that "medicine is the only profession that labors incessantly to destroy its reasons for existence, because medicine has been making some rather dramatic progress towards that goal" with its new scientific advances. Since human elements are involved, the men that are doing this will be subject to jealousies, distrusts, and hatreds by those who do not understand. These human traits, however, do not play a part in alleviating disease; preserving life; or postponing death. Yes, despite disturbing antagonisms often hurled at them, today's doctors have not changed from those of the past. They just have added tools to work with; which seems to also accentuate a loss in patient-physician relationship. That relationship is still there however. It is the public who must be educated to that fact.

There are many things that can be said at a dedication of a hospital, but in so saying them, a return is always made to the foundation, upon which that structure rests: a faithful, contributing community; a hospital, which realizes it is the servant, and not the master; and lastly, the loyal skilled physicians who see to it that the physical plant serves its purpose to its fullest capacity.

C. L. Oppegaard

C. L. Oppegaard, M.D.

President

Minnesota State Medical Association

Editorials

DRUG ERUPTIONS

The number of new drugs being produced is constantly increasing and modern living exposes everyone to numerous sensitizing substances chemically related to drugs such as food flavorings, coloring materials, and preservatives. Sensitizing inhalants are encountered in some occupations and accidental contamination of foods has been reported repeatedly. Vegetables and fruits are sprayed with insecticides and fungicides, and milk contamination with antibiotics used in treating dairy herds has been noted. Both medical and nonmedical exposures to these chemicals affords unlimited possibilities for sensitization.

Many drug eruptions are not diagnostic problems, and the causative substances are easily elicited. Patients who develop urticaria following the ingestion of penicillin are usually aware of the cause of their disorder. This editorial is concerned with eruptions which are infrequently encountered and may cause diagnostic confusion.

Cases of keratosis and epithelioma following the ingestion of arsenic are not common, because its medical use is rare. Arsenical keratosis involving the hands and feet may be mistaken for verruca vulgaris, verruca plantaris, or senile keratosis. Arsenical epithelioma is sometimes misdiagnosed as psoriasis or eczema by the inexperienced or unsuspecting observer. Careful morphologic examination is necessary to grossly differentiate these lesions, and histologic examination may be necessary to confirm the diagnosis. Some patients are aware of the source of the arsenic, and others are not. The latter have either forgotten their medication, or were exposed to it from unsuspected sources. Arsenical lesions occasionally develop many years after the medication has been discontinued.

Black hairy tongue is due to discoloration and hypertrophy of the filiform papillae. This disorder is an infrequent side effect of systemic medication, or topical exposure to antibiotics. The duration of the lesion is variable, and usually undergoes spontaneous remission following the elimination of the cause.

Innumerable sedatives and tranquillizers can produce eruptions. Some of the newer drugs produce their reactions by photosensitization of the skin. Chlorpromazine (Thorazine) is a potent photosensitizer. Prolonged and disabling dermatitis has been caused by the drug. Chloral hydrate rarely causes sensitization, although urticarial or scarlatiniform eruptions of the face, trunks, and extremities have been observed, some of which are accompanied by grave systemic symptoms. Bromides may produce eruptions resembling pyodermas after long continued use. The cutaneous reactions consist of pustular, furunculoid, or granulomatous lesions. Elimination of the drug is essential for the cure of the eruption. The use of bromides as a sedative is less common today than formerly. Present day exposure is usually from nonmedical sources. Laboratory examination for bromides in the blood and urine will aid the diagnosis in the suspected case.

Sulfonamides occasionally cause severe photosensitization. Sulfamethoxypyridazine (Kynex) has been reported to produce erythematous, bullous, and purpuric eruptions. Rapid fulminating and fatal agranulocytosis has occurred. Cutaneous photosensitization is a property of some of the older as well as the newer antibiotics. Cutaneous photosensitization has been observed and reported to various antibiotics of the tetracycline group. The most potent photosensitizer is demethylchlortetracycline (Declomycin).

The antihistamine drugs rarely produce eruptions. Benadryl has caused urticaria, facial edema, and glossitis. Agranulocytosis and urticaria have followed the use of Pyribenzamine. Phenergan may act as a photosensitizer. Cross-sensitization has been reported between Phenergan and Chlorpromazine. Fixed drug eruption has been observed to 8-chlorotheophylline in Dramamine.

Partial or complete alopecia of the scalp can be produced by a number of drugs. A toxic symptom of hypervitaminosis A is diffuse alopecia. Other drugs that may produce toxic alopecia are aminopterin, colchicine, heparin, and coumarin.

The safety of new or old drugs cannot be measured by statistical studies. All drugs are capable of causing sensitization. Repeated administration of a medication to the sensitized individual may result in cutaneous eruptions and/or severe systemic reactions. The discovery and elimination of the causative substance will relieve the patient of undesirable and uncomfortable dermatitis, and may occasionally save his life.

Charles J. Balogh, M.D.
Minneapolis, Minnesota

From the Division of Dermatology, University of Minnesota, Francis W. Lynch, M.D., Director, and the Department of Dermatology, Minneapolis General Hospital, Carl W. Laymon, M.D., Director.

NOMENCLATURE AND DIAGNOSIS IN CORONARY DISEASES. THE ROLE OF EFFORT.

III. Coronary Occlusion

(Continued from September)

Coronary occlusion means complete closure or bostruction of a coronary artery with infraction, that is, death or scar of the tissue supplied by the vessel. This is a situation in which ischemia is complete. An occlusion does not occur in a normal artery but almost invariably in a vessel narrowed by arteriosclerosis. The thrombus forms on an arteriosclerotic plaque or as a result of intimal hemorrhage in a plaque. On rare occasions, such intimal hemorrhage will form a hematoma that occludes the lumen of the vessel without the formation of a thrombus.

A through-and-through infarction from the endocardium to the pericardium will form unless the patient succumbs in the first 24 to 36 hours. Because the endocardium is affected, mural thrombi may form which can in turn give rise to embolization. Because the pericardium is involved, a pericardial rub is present.

The terms "coronary occlusion" and "coronary thrombosis" are used interchangeably in this report. However, "coronary occlusion" is the preferred term because the most common cause of occlusion is intimal hemorrhage which may result in damage to the overlying endothelium and secondary thrombosis, and can close the lumen without a thrombus. Also, coronary occlusion usually presents a well-defined syndrome that is readily distinguished from coronary insufficiency, and these conditions differ in their casual relationship to severe exertion and trauma.

"Myocardial infarction" used alone is an ambiguous term that confuses the nomenclature. "Myocardial infarction secondary to acute coronary occlusion" is a proper designation. That which occurs secondary to acute coronary insufficiency, or to a more specific etiology, such as hemorrhage or shock, should be so labeled.

Men between the ages of 30 and 70 years are most frequently subject to coronary occlusion. This has been attributed by Dock to men having been born with thick intimas that become susceptible to arteriosclerosis. Persons, and particularly women, with diabetes or hypertension have a predisposition toward coronary occlusion. So do persons with elevated cholesterol blood levels.

Coronary occlusion, unlike coronary insufficiency, in most cases occurs fortuitously without a precipitating cause. The only known cause is the presence of arteriosclerosis. The only established precipitating factors are physiologic shock and shock-like states as in severe hemorrhage, although instances in which these are operable probably are rare.

The question often arises as to whether acute coronary seizures are caused by effort. Effort causes angina pectoris in almost all cases and acute coronary insufficiency about half of the time. Coronary occlusion, however, occurs with effort only in rare cases and only coincidentally. One's occupation, even if it be physical labor, does not predispose to the development of a coronary occlusion. In a study of the incidence of coronary occlusion among groups of workers, laborers were found to develop less coronary occlusion than their percentage in the population at large would entitle them to do. The reverse was true of white-collar workers—store, office and business personnel. Professional persons also developed coronary occlusions more often than would be indicated by their percentage in the population. Thus, sedentary workers are not immune to coronary seizures, but, conversely, manual labor does not appear to increase the risk. Some English statistics have tended to overemphasize the immunity of those doing heavy labor to coronary disease. In any consideration of the incidence of coronary occlusion, it must be remembered that persons who are not well will not be engaging in physically arduous occupations.

Further evidence that coronary occlusion is not caused by effort or occupation is found by determining the precise hour at which seizures occurred. Here, the maximal incidence has been at an hour (2 A. M.) when the patient was at rest, and the next most frequent times at hours not ordinarily in the working day. Also, the incidence during working hours has not exceeded that during nonworking hours by enough to indicate that effort made a great difference. Likewise, taking the days of the week, coronary occlusion occurs no more frequently on working days than on days when one normally rests.

Incidence also has been determined in accordance with the type of activity engaged in at the time of coronary occlusion. The incidence during both sleep and rest exceeded that during even mild activity. The percentages during walking, moderate activity, and unusual or severe exertion were small. These results indicate that coronary occlusion occurs regardless of the type of physical activity engaged in or the type of rest taken. Shovelling snow is one type of physical exertion that requires special mention. It should be avoided by persons with angina pectoris or significant coronary artery disease. The physical exertion and cold weather both place a strain upon the circulation. Acute coronary insufficiency without occlusion may develop since the oxygen demand of the myocardium cannot be met because of the narrowed coronary arteries. This can be fatal for a person with coronary artery disease, but acute coronary occlusion will not develop because of the exertion.

The theory that effort, by suddenly raising aortic blood pressure, causes subintimal hemorrage and, therefore, coronary occlusion cannot be supported. It has not been demonstrated that a rise in systemic pressure is transmitted to the coronary capillaries or that it may cause subintimal hemorrhage. Also, mercury injected under pressure into the coronary arteries postmortem has not produced hemorrhage. Hypertensive patients might be thought more likely to sustain capillary intimal hemorrhage, but at necropsy intimal hemorrhage has been found as frequently in the hearts of non-hypertensive subjects. Also, intimal hemorrhage has been found as frequently in the hearts of persons bedridden for long periods as in the hearts of active persons.

In coronary occlusion, substernal pain is severe and prolonged, and nitroglycerin affords no relief. A temperature elevation to 101-103° is likely. Nausea and vomiting are not uncommon. Shock may be present. Invariably, the white cell count is increased, the sedimentation rate is rapid, and the serum transaminase is elevated. The latter may rise to between 150 and 250 units. The first heart sound is impaired. If one listens assiduously, a pericardial rub can be heard. The blood pressure nearly always falls. Arrhythmias and gallop rhythm are common, as is transient left heart failure. Sometimes severe left and right heart failure occurs as a complication.

The characteristic electrocardiogram shows RS-T elevations that progress to inverted T-waves. Deep Q-waves always are present. This pattern rarely can be reversed. Only about one in twenty electrocardiograms will have returned to normal a year after an occlusion.

Diagnosis of a coronary occlusion also is facilitated by fluoroscopic examination, but it cannot, of course, be performed during the acute phase of an attack. Abnormal pulsations will be found in the majority of cases in the apical and supra-apical portions of the left ventricle. Systolic expansion, lag, or "doubling" also is observed, or an absence or diminution of pulsations.

All in all, the clinical and electrocardiographic findings in coronary occlusion form a characteristic pattern so that an accurate diagnosis can be made and a distinction drawn between an occlusion and acute coronary insufficiency. When the diagnosis can be made and proper treatment instituted promptly, the outcome will be survival in the vast majority of cases seen in private practice. Even when the patient recovers the signs and symptoms may persist. The acute phase may last three to six weeks but the earmarks of a coronary occlusion can remain for years.

ARTHUR M. MASTER,
New York, New York

THE KENNY REHABILITATION INSTITUTE

To the physicians of Minnesota, the splendid contributions of the Kenny Rehabilitation Institute to the welfare of our people has not been dimmed by the administrative disruptions of last year. The outstanding service of this organization to our medical community will continue to be appreciated both by doctors and their patients who will use the services. Minnesota doctors are firmly dedicated to the support of this outstanding medical rehabilitation program and its new board of directors.

Since its reorganization last fall, the Kenny Rehabilitation Institute has been operating at full patient capacity. Physicians throughout the Upper Midwest have continued to refer patients for admission as quickly as space becomes available.

All beds at the institute were occupied about 90% of the time last year, with the average hospital population remaining about 74 per day. Average cost per patient per day was slightly less than $51. Income for patient care came from the Kenny Foundation, insurance companies, the patients themselves or their families, governmental agencies, and the National Foundation.

With the reorganization of the board of directors, a new administrative policy based on our experience with a similar department of physical medicine and rehabilitation at Mayo Clinic was adopted. A number of committees appointed from within the working staff now functions with medical personnel to bring the most complete rehabilitation service in the Upper Midwest to sufferers from neuromuscular disorders, and poliomyelitis.

All members of the new 15-man Kenny board of directors are from the Minneapolis area.

While its primary responsibility is that of rehabilitation, the Kenny institute also maintains several research projects in cooperation with various government, state and private agencies. The cleft palate clinic, the only one of its kind in the area, offers evaluation and follow up advice, on a team basis, to children with cleft lip or palate; a seizure clinic, in cooperation with University of Minnesota hospitals to assess the abilities and limitations of adult epileptics and find suitable employment for them; a work classification unit for cardiacs, operated in conjunction with Minnesota Heart association, to evaluate their work potential and attempt to match this to suitable employment; a pulmonary work evaluation unit; a muscle testing project, operated in cooperation with the U. S. Public Health Service to establish a base for normal force in various muscles and determine how much from that norm patients having neuromuscular disease vary in muscular weakness or strength; and a research project, financed by the Vocational Rehabilitation branch of the U. S. government to ascertain how effective present methods used in determination of disability benefits by the Social Security agency actually are and formulate methods to make this determination more efficient and effective.

The transition from a hospital specializing in the treatment of poliomyelitis to one handling patients with a score of conditions, equally as potent cripplers as poliomyelitis, has been accomplished over a period of recent years. The medical staff at Kenny Rehabilitation Institute is comprised of full and part-time physicians in the wide range of specialties required in an intensive treatment rehabilitation center.

Chronic disability can, of course, result from a multitude of diseases or injuries and seriously disrupt the psychosocial and vocational life of a patient. The Kenny rehabilitation team includes a physiatrist, responsible for the disability evaluation; an internist or pediatrician, who evaluates the patient medically and is responsible for his medical treatment; and consultants from all specialties of medicine for evaluation of problems related to their specialties. Paramedical personnel include a psychologist, vocational counselors, social workers, a speech pathologist, rehabilitation nurses, physical therapists, occupational therapists, and schoolteachers for patients of school age.

Referral to Kenny Rehabilitation institute is accepted only from physicians. The referring physician is considered an integral member of the rehabilitation team since the gains made during the patient's hospitalization may be lost if there is no medical follow-up. He participates actively in the rehabilitation program by attending evaluation conferences when possible, and through written and telephone communication. After the patient's discharge, the referring physician receives a letter informing him of gains made — if any—and listing the Institute's recommendations for his patient's continued care.

Kenny Rehabilitation institute makes charges for its services comparable to other hospitals in the Minneapolis-St. Paul area. The portion which the patient pays, however, is dependent primarily on his ability to pay. Necessary hospitalization at Kenny institute does not materially alter the basic standard of living of any patient nor impose undue financial hardship upon his family.

Neuromuscular and musculoskeletal conditions and disabilities generally amenable to treatment at Kenny Rehabilitation institute include the following:

Amputations, aphasia, arthritis, brain injuries, burns with contractures, cerebral palsy, cerebro-vascular accidents, congenital deformities, dermatomyositis, degenerative diseases of the spinal cord, post-encephalitic syndromes, Guillian-Barre syndrome, head injuries with neurological residuals, hemiplegia, joint deformities, muscular contractures, polymyositis, multiple sclerosis, muscular dystrophy, neuronitis, polyneuritis, paraplegia, peripheral nerve injuries, poliomyelitis, quadriplegia, residuals of severe trauma, rheumatoid arthritis, scleroderma, spina bifida, spinal cord injuries, spinal injuries and deformities and transverse myelitis.

Kenny Rehabilitation institute has already become one of the world's most respected rehabilitation centers. Members of the medical profession from throughout the nation and the world look to it for leadership in this field. Health and welfare agencies of the federal and state governments look upon it as a unique center for the development of rehabilitation techniques.

The benefits of rehabilitation are now available to only a fraction of those who need such help. Thirty million persons—nearly one-fifth of our population—have difficulty in moving or cannot move about without help. Of these, about one million are confined to their homes. This represents only a portion of those potentially in need of rehabilitation—victims of automobile accidents, home injuries, strokes, paraplegia.

Realizing its full potential in the field of rehabilitation, Kenny Rehabilitation institute should some day become even more valuable and even more famous than it has become in the field of poliomyelitis.

Frank H. Krusen, M. D.
The Kenny Rehabilitation Institute
1800 Chicago Avenue
Minneapolis 4, Minnesota

FREE
MINNESOTA STATE MEDICAL ASS'N.
YOUR DOCTOR KEEPS HIS EYE ON ME
WHEN I MAKE MYSELF SCARCE YOU MAY HAVE ANEMIA
This booth manned by Minnesota Family Physicians Members of the MINNESOTA ACADEMY of GENERAL PRACTICE
MINNESOTA STATE MEDICAL ASS'N.
FREE

Free Hemoglobin tests were given to a total of 8,363 persons attending the Minnesota State Fair at the Minnesota State Medical Association booth in the Education Building. Approximately 4½% or a total of 370 persons, were referred to their personal physicians for further evaluation. The State Fair project is sponsored each year by the Public Health Education Committee. Members of the Minnesota Academy of General Practice and the Minnesota Society of Medical Technology volunteered their services each day from 9 a.m. to 9 p.m. to administer and analyze the hemoglobin tests. Also participating in the project were student nurses from Twin City hospitals, and dieticians from the Minnesota Dietetics Association. The Committee also supervised the production of a pamphlet "Howdy, I'm Health Hemoglobin," offered to all visitors at the booth.

Medical Economics

Edited by the
Committee on Medical Economics
Minnesota State Medical Association
GEORGE EARL, M. D., Chairman

The Medical profession and its allies in the battle against compulsory social security approach to health care of the aged face a very tough year. . . . There will be new and increased pressures during the election year of 1962 to enact the King Bill (H.R. 4222) and only an all-out effort at the local and national level will defeat it . . . Portent of things to come were rife during the past week.

HIGHEST PRIORITY . . . On September 1, President Kennedy promised to ask Congress to place the "highest priority" next year on an aged care program financed by the compulsory social security system. . . . The President gave this assurance to Sen. Pat McNamara (D., Mich.) in a letter responding to a request from McNamara for such an expression. . . . Kennedy told the Senator: "I wholeheartedly agree with your belief in the importance of this legislation to our nation. I assure you that I intend to recommend that this legislation be given the highest priority at the next session of Congress. . . . The President said he was "Convinced that only the social security system can furnish satisfactory protection against the costs" that illnesses present to persons over 65. . . . In his letter of appeal to the President, McNamara explained that a strong presidential endorsement for an aged care bill "would serve to stimulate a prompt beginning to the planning" needed if the bill is to be enacted in 1962.

JAVITS JABS . . . On September 5, Sen. Jacob Javits (R., N.Y.) took the President and the Administration to task for failing to take action on H.R. 4222 or other legislation on health care of the aged during the First Session of the 87th Congress. . . . Javits urged that the Congressional recess of 1961 be utilized for the purpose of meetings between Democrats and Republicans for the development of a compromise bill for medical care for the aged. . . . Javits, who reasoned that Republican support would be necessary for any aged care bill, listed the following probable compromises: (1) cover all aged, not merely those on social security; (2) provide for preventive care—this to include physicians' services; (3) a plan whereby beneficiaries of voluntary health plans would be permitted to continue such plans as an alternative to accepting benefits under a Federal bill. . . . Javits attacked the Kerr-Mills program as being entirely inadequate. . . . He concluded by urging that the President give his entire support to a bill providing for medical aid to the aged and that the program be the first bill called up in January, 1962.

FORAND ACTIVE . . . Former Democratic Congressman Aime Forand of Rhode Island, whose aged care bill was defeated in the 86th Congress, is now pushing for a similar program from a different post. . . . He has just announced the formation of a National Council of Senior Citizens for Health Care through Social Security. . . . This group he says, will have headquarters on Capitol Hill and lobby for the goal its name specifies.

NEWSPAPER'S VIEW . . . Meanwhile, the **Wall Street Journal** carried a feature article by Staff Reporter John A. Grimes which began: "Chances are growing that Congress next year will approve the hotly controversial plan for medical care for the aged via Social Security. Passage, if it comes, will not be easy. Because of the cost, backers may have to settle for a cut-down version of President Kennedy's present scheme to pay hospital, nursing-home and other bills for 14 million Americans, aged 65 or more.

SUMMING UP . . . New pressures will arise for passage of H.R. 4222 or bills similar to it, and political writers will predict passage of a medical aid plan under Social Security. . . . But remember this: There were tremendous pressures for passage of the Forand bill and several newspapers predicted its enactment. . . . The Forand bill failed to pass, and the King bill will also be defeated if the medical profession and its allies wage a vigorous and intelligent fight.

Medical Care For Eye Patients

On June 30, 1961, the Report of the Subcommittee to Study the Relation of Medicine to Optometry was adopted by the House of Delegates of the American Medical Association with no dissenting vote. The report was the result of two years of study, was favorably acted upon by the A.M.A. Committee on Relationships of Medicine with Allied Health Professions and Services, transmitted to the House of Delegates with approval by the Board of Trustees. The following are highlights from that report.

The Report emphasizes that the care of the eye involves the care of the whole patient: "The patient with an eye problem, whether if functional, organic, or psychiatric origin, or the patient seeking preventive care, requires medical examination and diagnosis. . . . Medical competence is a requisite to diagnostic exclusion of more serious causes of symptoms than refractive error or functional disturbance. . . . Anything less than a medical examination of the eyes may jeopardize not only the patient's vision but his general health and even his life."

Diagnosis is identified as a medical art, realizable only "by the meticulous integration of the patient's medical history with the functional, optical, and physical findings, pharmacological responses, corneal tonometric readings and laboratory findings, all interpreted in relation to the individual and his environment."

Many grave diseases, it is noted, exhibit themselves in symptoms which simulate "simple ocular dys-functions." Such symptoms have been misinterpreted by the optometrist "not through any human error," but for lack of medical training.

Distinguishing between the ability to administer therapeutic agents and the ability to use them, the Report observes that "the proper use of agents such as orthoptics, diathermy, contact lenses, thermal agents, radiant and sonic energy," (all specifically or by descriptive terms, claimed at various times by optometrists as part of their sphere of practice) "demands . . . a specific knowledge of their physiological and pathological effects. Anything less than complete medical training does not qualify one to do more than evaluate the refraction of the eye and adapt lenses for the correction thereof in cases where this may be accomplished without drugs."

Public Confusion

Noting that patients sometimes seek optometric services under the impression that the optometrist is medically trained or that he is competent to determine whether the services of a physician are needed, the Report observes that the promotion of the latter concept by organized optometry "has led to the confusion of the public seeking eye care" . . . and . . . "sometimes . . . to delay in medical care with detriment to the patient." A "current official optometric publication" is cited as using the word "optometry" synonymously with "eye care" and stating that "optometry is the art and science of vision care. It is the only profession licensed . . . to examine eyes." The Report points out that "the diagnosis and treatment of diseases of the entire body including the visual system is the responsibility of the physician."

The Changing Status of Optometry

The Report cites evidence to indicate that optometry is attempting to expand its legal definition and scope of practice. The Report then concludes with "an informative statement" of principle to which, it hopes, "the majority of optometrists, conscientious and responsible, will be receptive":

"Medical training is not necessary to qualify one to perform refractive tests, nor is it always necessary to qualify one to prescribe satisfactory glasses. Over the years optometrists have earned, as refractionists, a measure of respect from physicians. Complete medical training is required to qualify one to determine the need for medical treatment, to diagnose, to assume the responsibility for detecting or determining the presence or absence of disease. To grant these responsibilities of the physician to the non-physician, or to imply that one other than a physician is competent to discharge them, is to establish a double standard for the practice of medicine which is not in the public interest.

"If optometrists wish to function as physicians, they should pursue the same education, be measured by the same standards and submit to the same tests as do doctors of medicine.

"Your committee has attempted to furnish the profession with a brief historical background of refraction and of the origin and nature of optometry as an independent service. It has shown the tendency of some segments of optometry to expand their endeavors beyond the field of refraction. The attempt to equate the optometrist with the eye physician presents a serious public health problem.

"The potential dangers existing in the present situation are known best to those physicians who are primarily concerned with eye care. The full significance has not been generally recognized by the medical profession as a whole or by the public."

The Art of Medicine

PR

Carl H. Woyke
Editor

WHAT'S YOUR PUBLIC RELATIONS I.Q.?

. . . HOW EFFECTIVELY IS YOUR MEDICAL SOCIETY TELLING ITS STORY?

The American Medical Association Public Relations Manual for county societies points out that effective communications calls for effective community actions. The Manual lists the following questions intended to serve as a check list for an effective public relations program. What's your county society's score?

Do You Conduct These Eight Essential Programs?

Yes **No**

1. An emergency call service that really does assure that every person can get a doctor fast in an emergency? —— ——
2. A grievance committee with teeth in it that hears and fairly adjusts patients' complaints about physicians' services or charges? —— ——
3. A continuing effort to achieve good press relations with newspaper reporters and editors, radio and TV people? —— ——
4. An active speaker's bureau that provides good physician speakers to talk on health subjects and other important topics related to medicine and welfare before local groups? —— ——
5. A program to orient new members on the whys and wherefors of medical society membership and to draw them into active participation in society affairs? —— ——
6. A well-publicized medical society plan that promises that everyone can obtain a doctor's services regardless of ability to pay? —— ——
7. Community service projects geared to local needs that help solve existing problems and win friends for medicine? —— ——
8. Citizenship programs that encourage every individual physician to exercise his personal responsibilities for good government? —— ——

These are the BASIC EIGHT projects for county medical societies, as essential today as they were when first presented six years ago. These are the cornerstones on which your society should build its public relations—or public service programs.

. . . Evaluate what you are doing.

If you already are conducting all, or nearly all of these programs, here are some additional questions to evaluate the effectiveness of them:

. . . Your emergency call system.

Do you advertise it in the yellow section of the telephone directory?

Is it listed in the emergency section in the front of the phone book?

Does the fire department know about your emergency plan? The police department?

Has the local newspaper carried a story about the plan in the last year?

Do you encourage newspapers to carry stories urging people to align themselves with a family doctor before emergency strikes and to teach to differentiate between a real and fancied emergency?

. . . Your grievance committee.

How many times has your grievance committee met in the past year?

When did the last newspaper article about your grievance committee appear?

Does your committee or society actually have power to crack down on physicians who consistently overcharge or whose services regularly are criticized before the committee?

. . . Your press relations.

How many medical society stories appeared in local papers last year?

Do you know reporters and editors on a first-name basis?

Have you met with newspaper, radio and TV and hospital people to work out a smooth arrangement for providing medical news?

Does your society provide the press with a list of spokesmen on medical news on a 24-hour basis?

Do you send suggested feature or column material to the papers?

. . . Your speakers bureau.

Do you send out lists of speakers and suggested topics of current interest to community groups each year?

Do you screen speakers in some way to avoid "crashing bores"?

Do you make use of tie-in literature and films from your state society and American Medical Association?

Have you conducted a health forum in cooperation with the local newspaper or a radio or TV station on health topics?

. . . Your orientation program.

What percentage of physicians in your county belong to your society?

Are you doing anything to encourage more men to be active society members?

Have you evaluated your society programs to find out if you are giving members what they want?

Do you plan some special gathering in addition to an indoctrination program for new members?

Do you familiarize new members with local medical customs and procedures?

Do you keep all members routinely informed on society affairs and issues of interest to the medical profession?

. . . Your guarantee of care program.

Has your society gone publicly on record to assure that everyone can obtain a doctor's services, regardless of ability to pay?

Have you told the public about that promise through newspapers, booklets, and other means?

What mechanism has your society set up to process requests for this care?

Are you studying other indigent care facilities to make sure they are well organized and functioning as efficiently as possible?

Are you attempting to familiarize the public with health and medical facilities already available?

. . . Your community service program.

Is your society making any effort to encourage more doctors to tackle international medical problems?

Have you developed any programs to attract more students to medical careers?

Is your society making an all-out effort to implement the Kerr-Mills bill?

What is your society doing to educate the public on medical costs?

What has your society done to promote better doctor-patient relationships and improve the doctor-image before the public?

What is your society doing in the fight against government medicine?

Is your society taking the leadership in community service programs?

Have you conducted campaigns to make sure everyone under 40 has been innoculated against polio?

Do you have an active school health committee?

Did you conduct a sports injury conference last year?

Have you conducted a safety campaign to reduce accidental poisonings, auto accidents, or childhood accidents?

Does your society take the initiative in setting up such services as child guidance clinics, mental health associations, and other needed community projects?

Are you conducting any worthwhile activities to benefit people over 65?

Does the medical society meet its fund-raising responsibilities on behalf of local organizations, hospitals?

Are local doctors well represented on boards and committees of health agencies and organizations?

Have you conducted or cooperated in staging a health fair for the public or science fair for the teen-agers?

Is your society carrying on health education projects, such as newspaper columns, radio and TV shows, health forums?

. . . Your citizenship program.

Do physicians get out the vote and get out and vote in local and other elections?

Does your society encourage political activity on the part of members to serve in city, county, and state elective offices?

How many members have served in such a capacity in the last year?

Do you encourage members to personally contact and write legislators in connection with health legislation?

Minnesota Blue Shield

It was announced in this space last month that Blue Shield is effecting a slight increase in the cost of both group and non-group contracts.

Physicians participating in the Blue Shield program will undoubtedly be receiving inquiries from patients concerning these changes.

The following information, explaining these rate adjustments in fuller detail may, therefore, be helpful:

New Non-group Rates

	Plan A	Amount of Increase	Plan B	Amount of Increase
Single:	$2.70	.35	$3.90	.35
Family:	$5.80	.70	$8.90	.85

New Group Rates

	Plan A	Amount of Increase	Plan B	Amount of Increase
Single:	$2.00	.15	$3.10	.15
Family:	$5.10	.35	$7.60	.40

Non-group subscribers are being notified by mail that the new rates will go into effect on their next regular billing date. The effective date will consequently vary. By the middle of November, however, all non-group subscribers will be informed of the change.

Group rates will be adjusted, effective on the anniversary date of the group contract.

It is hoped that participating physicians who have occasion to discuss these changes with their patients will emphasize the fact that Blue Shield has made only three previous rate adjustments in its 14 years of service, and each time with the purpose of adding significant new benefits to the contract.

Introduction of the new Blue Shield plans offering expanded benefits and extending service benefits to higher income categories is expected to be announced soon.

Widespread advertising on the promotion of the Blue Shield hospital expense rider will be under way this month (October).

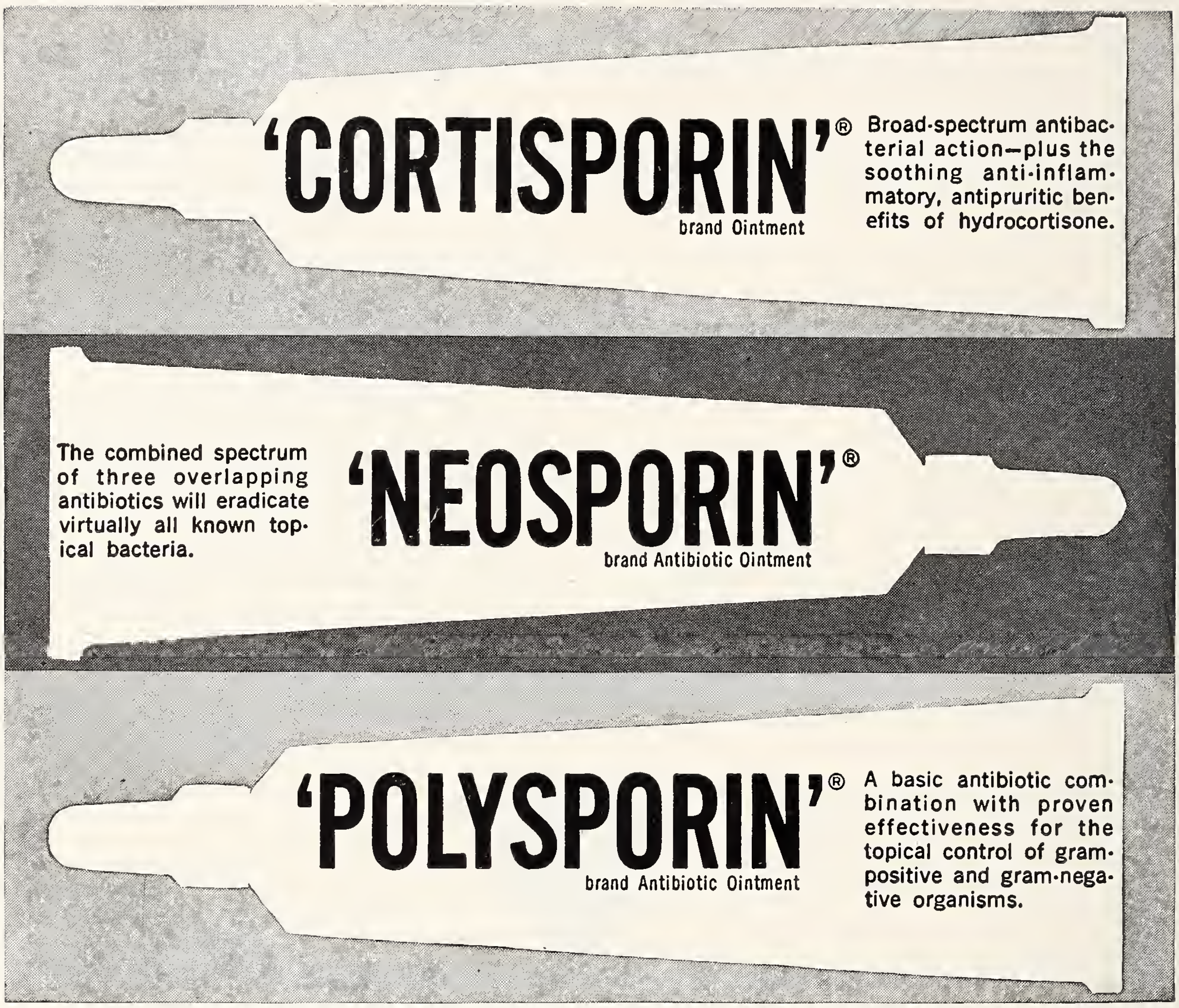
MINNESOTA BLUE SHIELD

A Community of Service

Blue Shield is a community service . . . offering pre-payment medical care protection to the citizens of Minnesota.
Blue Shield has never cancelled a contract because of age, condition of health, or amount of benefits furnished.
Today, Minnesota Blue Shield, with more than 800,000 subscribers, covers one-fourth of the State's population.

Minnesota Medical Service, Inc.
St. Paul 14, Minnesota

'B. W. & Co.' 'Sporin' Ointments rarely sensitize . . . give decisive bactericidal action for most every topical indication



'CORTISPORIN'® brand Ointment

Broad-spectrum antibacterial action—plus the soothing anti-inflammatory, antipruritic benefits of hydrocortisone.

'NEOSPORIN'® brand Antibiotic Ointment

The combined spectrum of three overlapping antibiotics will eradicate virtually all known topical bacteria.

'POLYSPORIN'® brand Antibiotic Ointment

A basic antibiotic combination with proven effectiveness for the topical control of gram-positive and gram-negative organisms.

Contents per Gm.	'Polysporin'®	'Neosporin'®	'Cortisporin'®
'Aerosporin'® brand Polymyxin B Sulfate	10,000 Units	5,000 Units	5,000 Units
Zinc Bacitracin	500 Units	400 Units	400 Units
Neomycin Sulfate	—	5 mg.	5 mg.
Hydrocortisone	—	—	10 mg.
Supplied:	Tubes of 1 oz., ½ oz. and ⅛ oz. (with ophthalmic tip)	Tubes of 1 oz., ½ oz. and ⅛ oz. (with ophthalmic tip)	Tubes of ½ oz. and ⅛ oz. (with ophthalmic tip)

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

Medical Education

FOREIGN MEDICAL GRADUATES INCREASE IN 1960-61

The number of foreign medical graduates in approved training programs increased by five percent during 1960-61.

A temporary decrease had been expected due to the program initiated by the Educational Council for Foreign Medical Graduates (ECFMG) requiring that foreign interns and residents be tested to determine whether their education measured up to American standards, the highest in the world.

However the annual report of the American Medical Association Council on Medical Education and Hospitals revealed that of 37,562 internships and residencies filled during 1960-61, there were 9,935 foreign medical graduates constituting 26 percent of the total. In 1959-60, there were 37,784 filled internships and residencies, of which 9,457, or 25 percent, were foreign graduates.

While the number of foreign residents increased by 1,270 in 1960-61, the number of foreign interns decreased by 792 compared with the previous year.

This is the first year since 1954-55 that foreign interns have comprised less than one-third of all the foreign physicians in training and is undoubtedly attributable to the ECFMG certification program.

That this decrease is likely to be only temporary is suggested by the results of the April 4, 1961, Educational Council for Foreign Medical Graduates examination which showed that 1,673 candidates were certified directly from abroad. If the same or a greater number is certified abroad as a result of the October, 1961 examination, then the previous numbers coming annually to this country for initial training as interns will be equalled or exceeded.

Although foreign physicians were in training in 46 states, the District of Columbia, Puerto Rico and the Canal Zone, 9 states accounted for 72 percent of the total. These were New York with 2,360 or 24 percent, Ohio with 893 or 9 percent, Massachusetts with 711 or 7 percent, Illinois with 704 or 7 percent, Pennsylvania with 684 or 7 percent, Michigan with 499 or 5 percent, New Jersey with 465 or 5 percent, Maryland with 450 or 4 percent, and Missouri with 402 or 4 percent.

The largest single group of foreign physicians was 2,303 from the Philippine Islands.

As to the future, while it is fair to estimate that increasing numbers of properly qualified foreign trained physicians will be coming to this country annually, it is probable that the total on duty may decrease as the federal government branches responsible for administering the U. S. Information and Educational Exchange Act of 1948 implement the law more effectively regarding return of exchange students to their native lands upon completion of training. The present policy limits such training of physicians to five years.

The Council also reported on two recently inaugurated programs which are expected to shape the future pattern of both medical practice and the health care of the American public.

The first step was the formation of the Advisory Committee on Internships and Hospital Services. This group will "consider methods of producing a more appropriate balance between the number of approved internships and the number of available candidates." In addition, it will consider and make recommendations for "methods of providing competent professional assistance to hospital staffs other than by interns or residents." The Committee's final report is due by June, 1962.

The second step is the formation of an Advisory Committee on Graduate Medical Education and Training to study the entire present-day pattern of graduate medical education, i.e., the internship and residency phase of a physician's training lasting from one to seven years.

The Committee will make recommendations concerning the conduct of such training in the future in relation to the needs of the nation for physicians, the needs of the public for medical care, and developing patterns of medical practice.

Eight organizations including the A.M.A., are cooperating in the latter program expected to begin this fall or winter and take two or three years to complete.

It is possible that this cooperative study may have an effect on graduate medical education and training not unlike the effect of the Flexner report on undergraduate medical education in 1910, the Council said. (The report of Abraham Flexner is credited with elevating the standards of medical education by eliminating diploma-mill medical schools.)

The Council also spoke out on the "economic pressure" on medical students, particularly as it affects recruitment of the qualified student to medicine.

The report showed that monthly stipends for interns increased again for 1960-61. The average stipend in hospitals affiliated with medical schools was $178, a 7 percent increase, and for the non-affiliated hospital $219, a 5 percent increase. Affiliated hospitals paid an average of $171 to the single and $184 to the married intern per month, while the nonaffiliated hospital paid the single intern an average of $215, and the married intern $223.

"It is clear that some major changes are in order if medicine is to maintain an effective competitive posture in the national recruitment tug-of-war," the Council said.

VAGINITIS

A new product with triple antimicrobial action for dependable control of vaginitis, VAGICIDE combines the antibacterial, antifungal agent 9-aminoacridine undecylenate and the topical antibacterial N-myristyl-3-hydroxybutylamine HC1 with the surface-active quaternary disinfectant methylbenzethonium chloride. The product contains no mercury compounds.

VAGICIDE combats all causative and associated organisms and is especially valuable against monilial infections, now more frequently encountered because of the wide-scale use of antibiotics. The synergistic effect makes possible low concentrations with reduced risk of irritation.

VAGICIDE provides extremely rapid symptomatic relief, usually within hours, without staining, sensitization or adverse systemic effects. Objective relief is outstanding with over 95% effectiveness in a recent typical series.[1] Another series showed 93% effectiveness against Candida albicans (monilia) and 87% against Trichomonas vaginalis.[2]

The product is supplied as a powder for office insufflation and as vaginal tablets for patient use. Both forms should be used for best results. Complete, official literature available on request.

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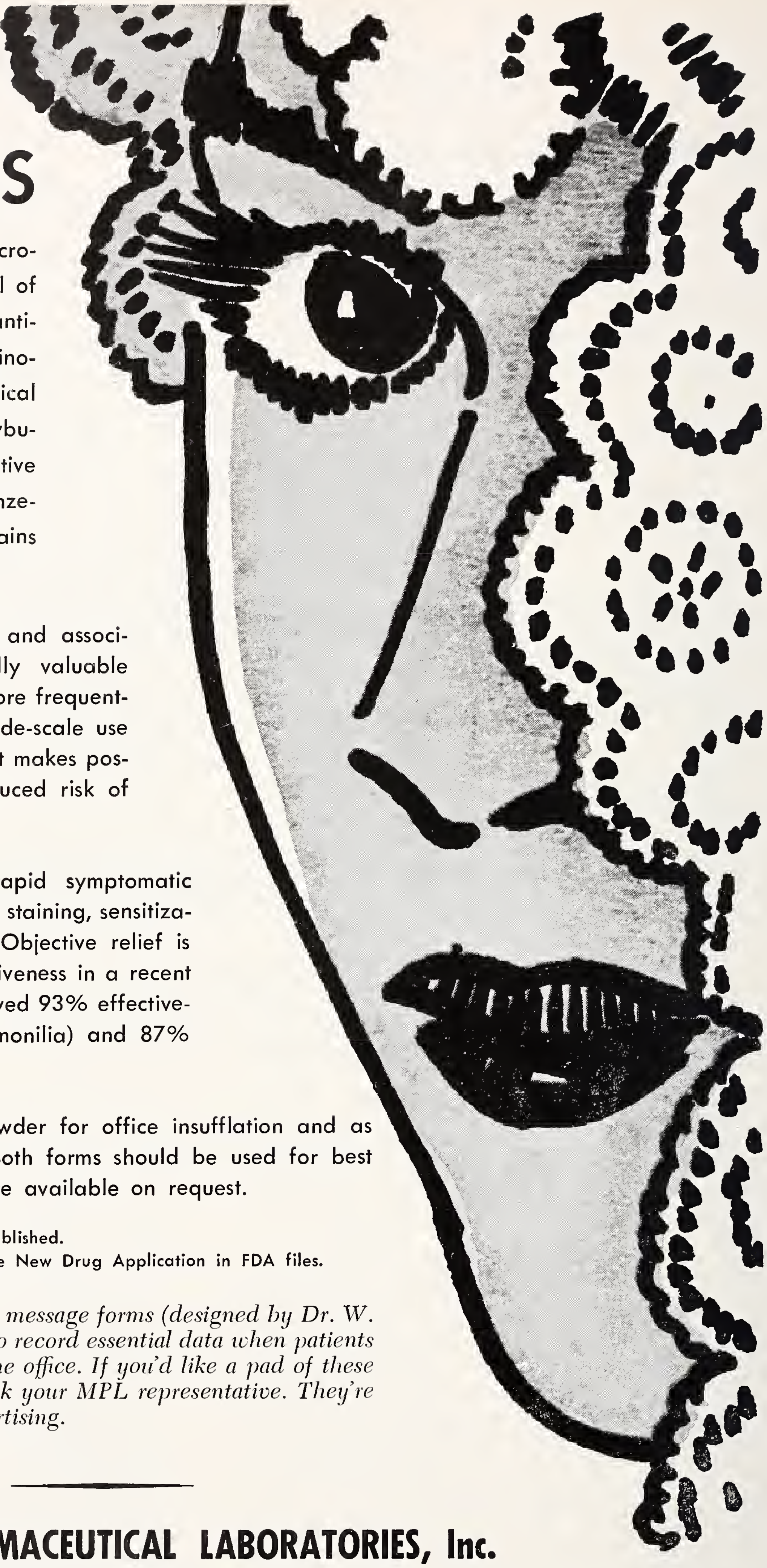
(1) C. Herman Weinberg, M.D.—to be published.
(2) R. Rogers Fowler, M.D.—from effective New Drug Application in FDA files.

We have made up some telephone message forms (designed by Dr. W. L. Portteus) for your receptionist to record essential data when patients phone while you are away from the office. If you'd like a pad of these for trial, please write, phone or ask your MPL representative. They're free, of course, and without advertising.

MINNESOTA PHARMACEUTICAL LABORATORIES, Inc.

Saint Paul 16, Minnesota



Meetings and Announcements

OCTOBER

American Medical Association Council on Foods and Nutrition Conference on Obesity and Adolescence, October 21, Stanford University, Stanford, California.

College of American Pathologists, Middle-East Section, Haddon Hall Hotel, Atlantic City, N. J., October 27-28. Dr. Harry H. Stumpf, The Mountainside Hospital, Montclair, N. J., Program Director.

Eastern Psychiatric Research Association, New York City, October 27-28. Dr. David J. Impastato, 40 Fifth Avenue, New York, Secretary-Treasurer.

American College of Chest Physicians, Sheraton Towers, Chicago, October 23-27. Write: Mr. Murray Kornfield, 112 E. Chestnut St., Chicago, Executive Director.

American Cancer Society, Biltmore Hotel, New York City, New York, October 23-24. Write: Professional Education Section, American Cancer Society, 521 West 57 Street, New York 19, New York.

Midwest Regional Group of the Medical Library Association, Rochester, Minnesota, October 27-28. Contact: Thomas E. Keys, Librarian, Mayo Clinic.

Milwaukee Medical Conference sponsored by the Medical Society of Milwaukee County, October 19 and 20 at the Milwaukee County General Hospital. Contact: John C. Kadonsky, Broadway 3-7700, Milwaukee.

NOVEMBER

American Medical Association Clinical Meeting, Denver, November 26-30. Dr. F. J. L. Blasingame, 535 N. Dearborn, Chicago 10, Executive Vice President.

American Psychiatric Association, Hotel Schroeder, Milwaukee, Wisconsin, November 16-18. Miss Joan D. McGucken, 756 North, Milwaukee 2, Wisconsin, Administrative Assistant.

Interstate Postgraduate Medical Association, November 13-16, Clevland, Ohio. Write: E. R. Schmidt, M. D., Secretary, Interstate Postgraduate Medical Association, Box 1109, Madison 1, Wisconsin.

Southern Medical Association will sponsor a Symposium on Cosmetic Problems, November 8, at Dallas, Texas. Contact AMA, Committee on Cosmetics, Chicago.

Section of Ophthalmology and Otolaryngology of the Southern Medical Association, November 6-9, Dallas, Texas. Contact, Dr. A. C. Esposito, First Huntington National Bank Building, Huntington, West Virginia.

San Diego County General Hospital, 15th Annual Postgraduate Assembly, County Hospital, San Diego, California, November 1-2. Contact: James E. Sandell, M.D., c/o San Diego County General Hospital.

Twelfth County Medical Societies Conference on Disaster Medical Care, Palmer House, Chicago, November 4-5. Contact: AMA—Chicago.

The American College of Obstetricians and Gynecologists, November 16-18, Louisville, Kentucky. For further information write: Mrs. Ruth Sutton, Information Counsel, 79 West Monroe Street, Chicago 3.

ANNOUNCEMENTS

Next scheduled examination (Part 1) written of American Board of Obstetrics and Gynecology will be held in various cities on Friday, January 5. Current bulletins may be obtained from Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland, Ohio.

* * *

Five intensive postgraduate courses patterned for the practitioner are planned for fall and winter at the Medical College of Georgia, Augusta, Georgia. Contact Dr. Claude-Starr Wright, Department of Continuing Education, Medical College of Georgia, Augusta, Georgia.

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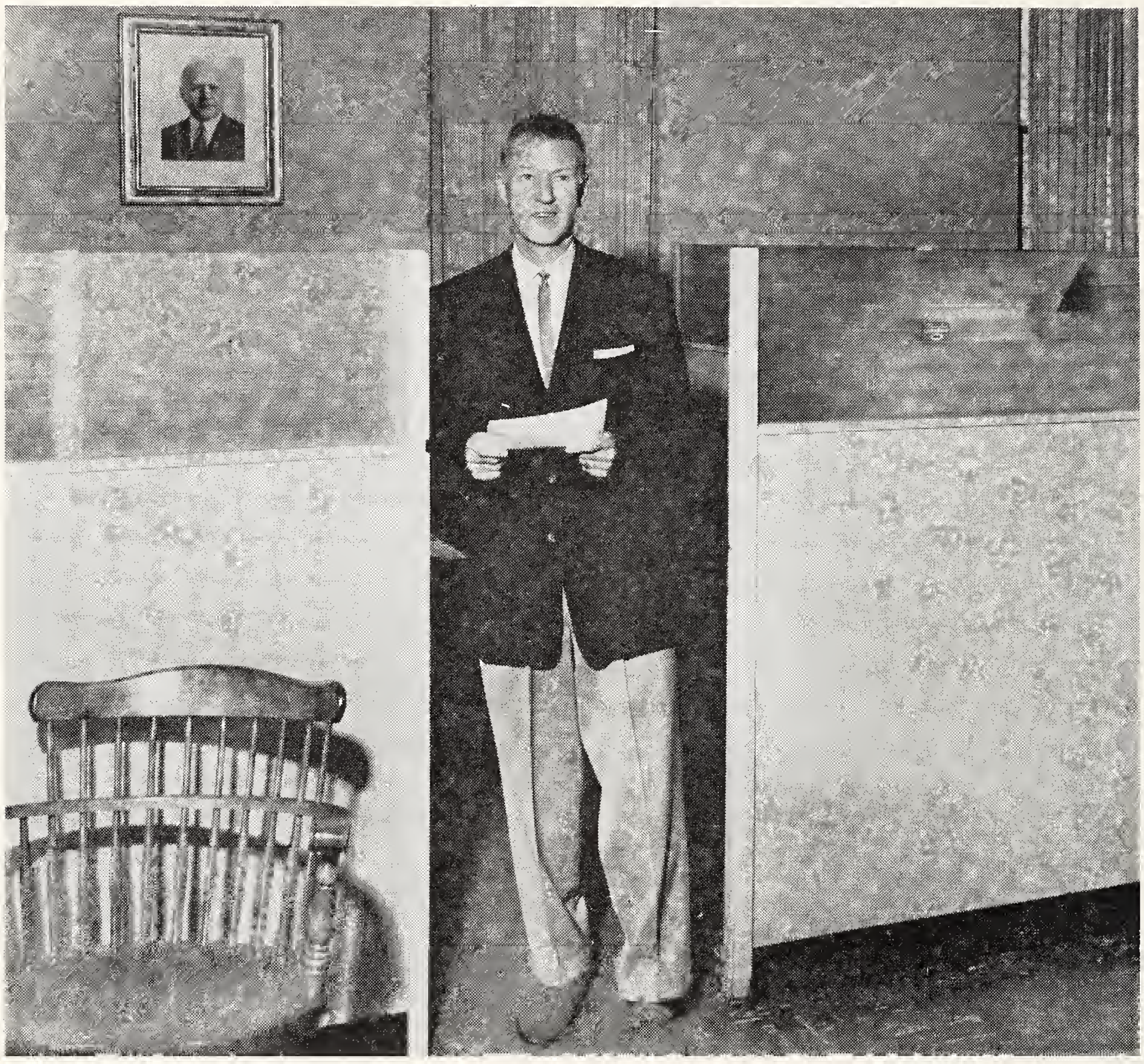

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* * *

Essays for the medical essay contest, Caleb Fiske Prize of the Rhode Island Medical Society, must be submitted by December 11th, to the Secretary, Fiske Fund, Rhode Island Medical Society, 106 Francis Street, Providence, R. I.

* * *

The American College of Gastroenterology announces that its annual course in Postgraduate Gastroenterology will be given at Sheraton-Cleveland in Cleveland, Ohio, October 26, 27, 28.

* * *

One complete session will be held at the Cleveland Clinic and at the Cleveland Academy of Medicine. For further information and enrollment write: American College of Gastroenterology, 33 West 60th Street, New York City.

* * *

Urology Award — The American Urological Association offers an annual award of $1,000 (first prize of $500, second prize $300, and third prize $200) for essays on the result of some clinical or laboratory research in Urology. For further information write: William P. Didusch, 1120 North Charles Street, Baltimore 1, Maryland. Essays must be in his hands before November 15, 1961.

Medical Continuation Courses to be presented at the Center for Continuation Study, University of Minnesota, Minneapolis, Minnesota.

* * *

Obstetrics for Specialists, October 19-21, Dermatology for Specialists, November 6-10, Radiology for Radiologists (Urologic Radiology) November 15-17, Opthalmology (Refraction for General Physicians November 16-18, Orthopedics for Orthopedic Surgeons (Hand Surgery).

* * *

The American Thoracic Society invites submission of abstracts of papers relating to field of tuberculosis and other respiratory diseases for presentation at its 57th Annual Meeting in Miami Beach, Florida, May 20-23, 1962. Abstracts must be in hands of committee not later than January 5, 1962. Contact: Asher Marks, M. D., American Thoracic Society, 1790 Broadway, New York

* * *

The American Thyroid Association again offers the Van Meter Prize Award of $500 which will be made at the annual meeting of the association in New Orleans, Louisiana, May 9-12, 1962. Essays should be sent to Theodore Winship, M.D., 430 N. Michigan Avenue, Chicago not later than January 1, 1962.

* * *

The University of Minnesota announces a continuation course in Urologic Radiology, November 6-10, Mayo Memorial Auditorium, University of Minnesota Medical Center. Contact: Center for Continuation Study, University of Minnesota, Minneapolis.

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In Memoriam

FREDERICK C. SCHULDT

Dr. Frederick C. Schuldt, 85, prominent St. Paul surgeon died August 17th.

Dr. Schuldt grew up on a farm in Rost township and taught school before he received his medical degree from the University of Minnesota. He practiced medicine in St. Paul until he retired at the age of 70.

He was on the St. Joseph's hospital staff for forty-three years, was a member of the Ramsey County Medical Society, a life membr of the Minnesota State Medical Association, a member of the Professional Men's Club, the St. Paul Surgical Club and is a fellow in the American College of Surgeons. Dr. Schuldt was a member of the 50 Club.

Dr. Schuldt is survived by his wife, two sons and two daughters.

MILTON D. STAREKOW

Dr. Milton D. Starekow, 47, prominent Thief River Falls physician and surgeon, died suddenly August 20th.

Born in Philadelphia, Pa., Dr. Starekow graduated from Rush Medical College in Chicago, Illinois. He moved to Thief River Falls and founded the Starekow Clinic. Dr. Starekow was a former chief of the staff of Northwestern Hospital in Thief River Falls, a former president of the Red River Valley Medical Society, a member of the Minnesota State Medical Association serving in its House of Delegates. He was a member of the American Medical Association and the American Academy of General Practice. He also was a member of the Thief River Falls board of education, Junior Chamber of Commerce, Lions Club, Shrine Club, Masonic Lodge, Elks Lodge, Temple Beth El, University of North Dakota Alumni Association, the Retrievers Club and Ducks Unlimited.

He is survived by his wife, a son, and a daughter.

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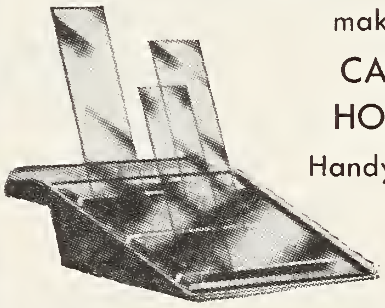

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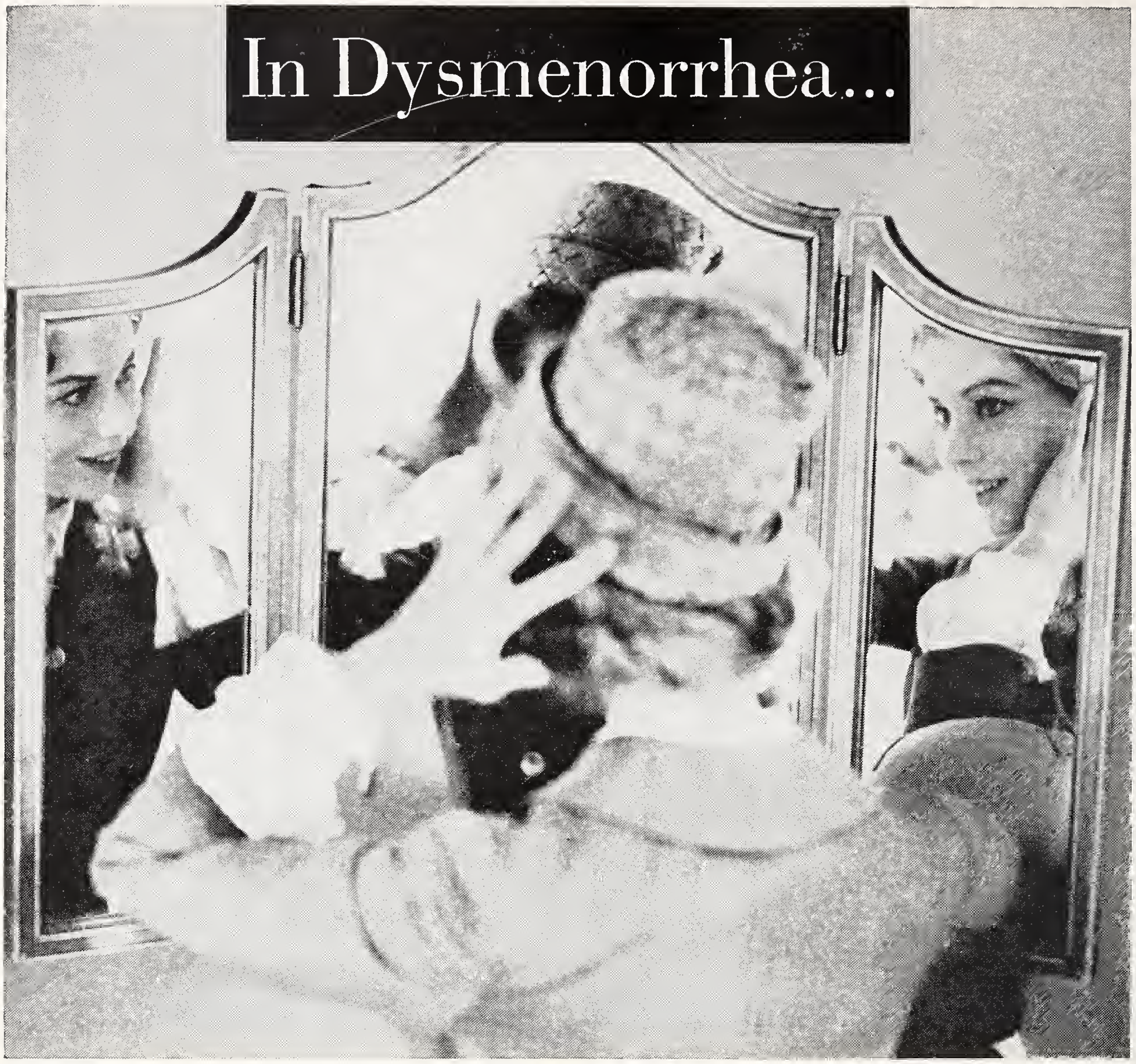
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Physician's Diary

Dr. Paul E. Brenk has joined the Lake Region Clinic in Detroit Lakes. He is now associated with **Doctors William C. Dodds, Virgil Watson** and **Robert N. Watson.**

* * *

Dr. Archibald W. Graham, 83-year-old practicing physician from Chisholm, recently paid his 100th visit to Mayo Clinic to "see what's new and how the boys are keeping up on things."

* * *

Dr. Alfred E. Daly has joined the Family Medical Clinic of Montgomery where he will be associated with **Doctors Alfred J. Lehrer** and **Fred C. Westerman.**

* * *

Dr. Glenn Gullickson, Jr., department of physical medicine and rehabilitation, University of Minnesota Medical School, was named executive director and manager of the American Congress of Physical Medicine and Rehabilitation in Cleveland recently.

* * *

Dr. Robert J. White, research associate in the Mayo Foundation, has become chief of the Department of Neurologic Surgery in the Cleveland General Hospital, Cleveland.

* * *

Dr. William A. Piper, Mountain Lake's pioneer doctor, recently retired after 47 years of service to his community.

* * *

Dr. H. K. Helseth, Jr., has joined Chisholm's Adams Clinic.

* * *

Dr. Richard H. Meyer is now associated with his father, **Dr. Paul F. Meyer,** and his brother, **Robert P. Meyer,** in the practice of medicine and surgery in Faribault.

* * *

Dr. J. B. Lund, Mankato, recently addressed the Southern Minnesota Medical Association in Austin, on "The Value of Psychic Energizers in Therapy."

* * *

Dr. Edward H. Rynearson, chairman of two sections of medicine at the Mayo Clinic, will be awarded an honorary doctor of science degree from the University of Pittsburgh on October 4th.

* * *

Dr. Donald Werner recently supervised a Polio Clinic in Aurora.

* * *

The Municipal Hospital in Fosston recently opened its doors. The Fosston Hospital is a 44-bed structure. Dr. C. L. Oppegaard, President of the NSMA gave an opening address.

Dr. Harry Hall, associate professor at the University of Minnesota, recently spoke at the Range Medical Society meeting. **Dr. Edward Ciracy,** Grand Rapids, is president of the medical society.

* * *

Dr. Martin S. Munson has moved his offices from Barnum to Moose Lake.

* * *

Dr. Maxwell M. Barr, a Minneapolis obstetrician and gynecologist, spoke at the annual meeting of the Minneapolis Mrs. Jaycees.

Annual
Clinical
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Dr. Myron D. Olmanson and his family have left St. Peter for Namkham, Burma, to join the staff of **Dr. Gordon Seagrave.**

* * *

Dr. Camillo V. Bologna has become associated with **Doctors Donald Nollet** and **Oscar Wilbur** as pathologists at the Hibbing General Hospital.

* * *

The Pine County Memorial Hospital Medical Staff recently elected the following officers: President, **Dr. E. G. Hubin,** Sandstone; Vice President, **Dr. M. S. Munson,** Moose Lake-Willow River; Secretary, **Dr. H. W. Henry,** Hinckley; Treasurer, **Dr. E. G. Hubin,** Sandstone.

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Dr. Jerome Grismer, St. Louis Park Clinic; **Dr. Marcus Shelander,** St. Paul urologist, and **Dr. Martin Janssen,** cardiologist, St. Paul, spoke at the annual fall seminary of the Minnesota Academy of General Practice held in Detroit Lakes.

* * *

Dr. James Cain of the Mayo Clinic spoke recently at the Rotary Club luncheon meeting in Rochester on the subject "In the Far East with Lyndon Johnson."

* * *

Dr. Richard G. Rowe has opened a medical practice with **Dr. R. A. MacDonald** in Littleforks.

* * *

Dr. Charles Mayo was presented a grant of $25,000 for heart research at the Mayo Clinic in Rochester from the new Max Baer Heart fund of the Fraternal Order of Eagles at their recent convention in Minneapolis.

* * *

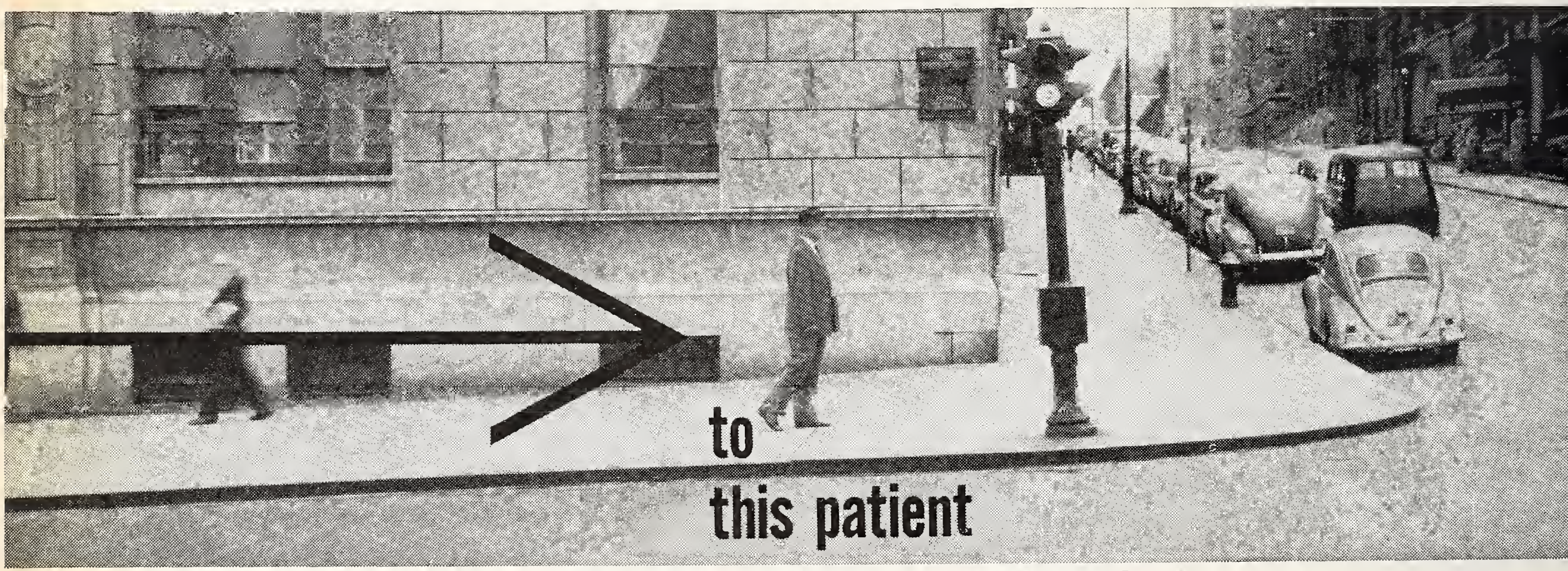
Dr. M. P. Morse and his son, **Dr. Roger D. Morse,** have become associated in LeRoy.

* * *

Doctors Robert E. Doan, F. J. McCaffrey and **George O. Hilgermann** have become associated in Wayzata.

* * *

Doctor Reynold P. Flom, St. Paul, has been elected a director of Profile Extrusions, Inc., Hastings plastic company.



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Dr. Donald J. Erickson of the Mayo Clinic was elected president and **Dr. Frank H. Krusen** re-elected treasurer of the American Congress of Physical Medicine and Rehabilitation for the ensuing year.

* * *

Dr. David P. Anderson, member of the Austin Clinic surgical staff, spoke recently at a conference sponsored by the Faribault County Unit of the American Cancer Society.

* * *

Appointment of **Dr. Harold M. Wexler,** Minneapolis, as local medical consultant for the City of Hope National Medical Center, Duarte, California, was recently announced by the executive director, **Dr. Paul L. Wermer.**

* * *

Dr. A. H. Fortman of the staff of the Northwest Clinic in Crookston spoke on the new techniques of cancer at the Lions Club meeting held in Crookston.

* * *

Dr. James Knapp has joined the staff of the Detroit Lakes Clinic.

* * *

Doctors C. J. Mock, D. R. Nelinmark and **W. S. Neff** of the Lenont-Peterson Clinic in Virginia and **Dr. D. R. Lannin,** professor of orthopedic surgery at the University of Minnesota, spoke at the Symposium on Disabilities held recently.

* * *

Doctor John A. Briggs provided writer James A. Michener with a good springboard for an article called "Report from the Frenzied Fifties" which appeared in the New York Times magazine and the St. Paul Pioneer Press. Dr. Briggs spoke on the "Frenzied Fifties" at the June AMA meeting.

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PHYSICIAN WANTED—General practice, West Central Minnesota; Forty-bed hospital, town of two thousand. Good office space to be remodeled for M.D. and local dentist. Local doctor retiring. Write Box 164, care of MINNESOTA MEDICINE. 10-61.

WANTED—N.W. Minnesota Clinic urgently needs general practitioner and G.P. surgeon or Board qualified surgeon on permanent or locum tenens basis. Joint commission approved hospital, open staff. City of 8,000, good transportation, schools, churches and recreation. Write Box 165, care of MINNESOTA MEDICINE. 12-61.

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PHYSICIAN WANTED—young, general practitioner to join well established four man group in suburban Minneapolis. Write Box 162, care of MINNESOTA MEDICINE. 11-61

PHYSICIAN WANTED—For general practice. North Shore Community of 1400—new, fully equipped hospital. A real "haven" for fishermen and hunters. Write: Gael A. Coleman, Administrator, North Shore Hospital, Grand Marais, Minnesota. 10-61

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Contents fo

SCIENTIFIC ARTICLES

ORIGINAL CONTRIBUTIONS

Alcoholism and Drug Addiction
Ian Gregory, M.D., D. Psych., M.P.H.
Minneaolis, Minnesota 445

Nutrition in Medical Practice—Past and Present
G. H. Berryman, M.D.
Evanston, Illinois 454

Treatment of the Sexually Incompatible Family Unit
Virginia E. Johnson and William H. Masters, M.D.
St. Louis, Missouri 466

Some Facets of Adenomyosis and Endometriosis
Harry B. Neel, M.D., Albert Lea, Minnesota 472

A Quarter Century of the Minnesota Obstetrical and Gynecological Society
Edward A. Banner, M.D., Rochester, Minnesota 476

The Minnesota Professional Corporation Act: Background, Advantages, Provisions, Problems
Jule M. Hannaford, L.LB., Minneapolis, Minnesota 483

ABSTRACTS AND BRIEFS 493

BOOK REVIEWS 494

Minnesota Medicine Represents

Duluth Surgical Society
Minneapolis Academy of Medicine
Minneapolis Obstet. and Gynecol. Soc.
Minneapolis Surgical Society
Minnesota Academy of Medicine

Minn. Acad. of Occup. Med. and Surg.
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Minn. Society of Clinical Pathology

Medicine

ovember, 1961

Volume 44
Number 11

MISCELLANEOUS ARTICLES

EDITORIALS

The Alcoholic
Anonymous 497

People Need People
Ivan W. Sletten, M.D. and Frank J. DeMars, M.D. 499

PRESIDENT'S LETTER 495

LETTERS TO THE EDITOR 500

THE ART OF MEDICINE 501

BLUE SHIELD A-41

MEETINGS AND ANNOUNCEMENTS A-43

IN MEMORIAM A-45

PHYSICIAN'S DIARY A-47

CLASSIFIED ADVERTISING A-52

INDEX TO ADVERTISERS A-53

Minn. Society of Internal Medicine
Minn. Society of Neurol. & Psych.
Minn. State Med. Association
Minnesota Surgical Society

Minnesota Thoracic Society
Northern Minn. Med. Assn.
Saint Paul Surgical Society
Southern Minn. Med. Assn.

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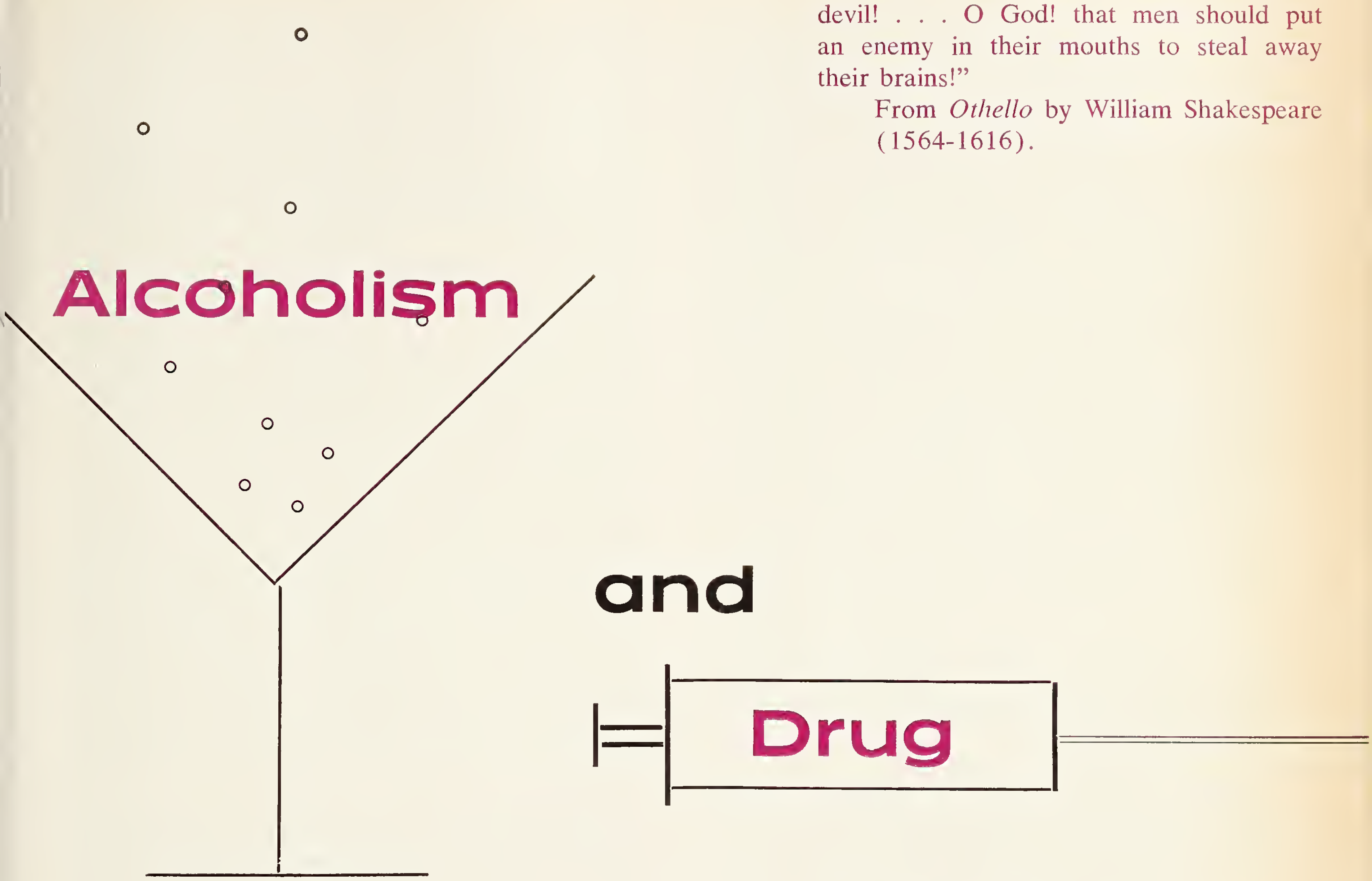
> "O thou invisible spirit of wine! if thou hast no name to be known by, let us call thee devil! . . . O God! that men should put an enemy in their mouths to steal away their brains!"
>
> From *Othello* by William Shakespeare (1564-1616).

Alcoholism and Drug ADDICTION



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Minneapolis, Minnesota

THE ALCOHOLISM SUBCOMMITTEE of the World Health Organization Expert Committee on Mental Health held its first session in 1950, at which time the following was suggested as an ad hoc and provisional definition of alcoholism:

> ". . . any form of drinking which in its extent goes beyond the traditional and customary "dietary" use, or the ordinary compliance with the social drinking customs of the whole community concerned, irrespective of the etiological factors leading to such behavior and irrespective also of the extent to which such etiological factors are dependent upon hereditary, constitutional or acquired physiopathological and metabolic influences."

The subcommittee subsequently considered it more appropriate to apply the preceding description to the more extensive category of *"excessive drinking,"* and to reserve the concept of *alcoholism* for the following more restricted category:

> "Alcoholics are those excessive drinkers whose dependence upon alcohol has attained such a degree that it shows a noticeable mental disturbance or an interference with their bodily and mental health, their interpersonal relations, and their smooth social and economic functioning; or who show the prodromal signs of such developments. They therefore require treatment."

They considered that all forms of excessive drinking begin with a symptomatic stage (symptomatic of psychological or physical pathology

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or of social conditions) and that sometimes this stage may be prolonged and not developed further. This initial phase of *irregular symptomatic excessive drinking* is apt, however, to proceed to such a dependence on alcohol as to satisfy the preceding definition of alcoholism. The early stages of alcoholism may be described as *habitual symptomatic excessive drinking,* which may consist of either daily drinking (particularly in wine-drinking and beer-drinking countries) or intermittent bouts of excessive drinking (particularly in countries or social groups where the pattern of drinking involves predominantly the use of distilled spirits). More advanced alcoholism is characterized by "inability to stop" drinking (wine or beer) or "loss of control" over alcohol intake (during bouts of drinking distilled spirits), in which case the alcoholic may be described as an *addictive drinker* (*alcohol addict*).

Meanwhile, the World Health Organization expert committee on drugs liable to produce addiction drafted the following definition of *"drug addiction:"*

> "Drug addiction is a state of periodic or chronic intoxication, detrimental to the individual and to society, produced by the repeated consumption of a drug (natural or synthetic). Its characteristics include:
>
> (1) An overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means;
> (2) A tendency to increase the dose;
> (3) A psychic (psychological) and sometimes a physical dependence on the effects of the drug."

At the same time they distinguished between *habit-forming drugs* and those producing true addiction and offered the following definition of the former:

> "A habit forming drug is one which is or may be taken repeatedly without the production of all the characteristics outlined in the definition of addiction and which is not generally considered to be detrimental to the individual and to society."

Because of continuing confusion between the terms *addiction* and *habituation,* however, the committee decided to clarify the distinction between these terms by the following statement:

> "The cycle of administration leading to addiction may begin in legitimate medical use, but becomes established as a serious problem through self administration beyond medical need. In the development of addiction there is an interplay between pharmacological action and the psychological makeup of the individual.
>
> "There are some drugs, notably morphine and pharmacologically morphine-like substances, whose specific pharmacological action under individual conditions of time and dose will always produce compulsive craving, dependence and addiction in any individual. Addiction will develop sooner in those individuals whose psychological makeup leads them to seek and find escape in the pharmacological action of drugs. Sooner or later there must come a time when the use of the drug cannot be interrupted without significant disturbance, always psychic (psychological) and sometimes physical. With these drugs pharmacological action is paramount; psychological makeup adjuvant. Such drugs cause individual and sociological damage and must be rigidly controlled.
>
> "There are other drugs which never produce compulsive craving, yet their pharmacological action is found desirable to some individuals to the point that they readily form a habit of administration, an habituation. Administration of such drugs can be interrupted without significant disturbances. With them psychological makeup is paramount; pharmacological action adjuvant. They cause no sociological damage and do not need rigid control.
>
> "There are some drugs whose pharmacological action is intermediate in kind and degree between the two groups already delineated so that compulsive craving, dependence and addiction can develop in those individuals whose psychological makeup leads them to seek and find an escape in drugs. With these substances psychological makeup is the determining factor, but pharmacological action plays a significant role. In some instances individual and sociological damage may develop, but since the incidence of the damage is not general, the type and degree of control of drugs of this group are better left at present to national consideration."

Alcoholism and other forms of drug addiction are usually considered separately and this may be desirable from research and therapeutic standpoints. However, neither constitute clearly defined circumscribed nosological entities of uniform etiology, pathology and treatment. On the contrary, both alcoholism and other forms of addiction constitute very heterogeneous groups of conditions, which, however, have sufficient in common for them to be considered together in the present article. Many attempts have been made at classification, often related to preconceived etiological convictions. For the sake of simplicity, only two classifications will be presented here, one being an attempt at logical grouping of the drugs which may be used by addicts and the other containing the most frequently used pathways to addiction.

Drugs Associated With Addiction

1. Alcohol

2. Opium and its derivatives (morphine, heroin, codeine, etc.)

3. Synthetic narcotics (pethidine, meperidine, methadone, allylprodine, benzethidine, furethidine, levophenacylmorphan, metazocine, norlevorphanol, phenazocine, piminodine, etc.).

4. Hemp or marijuana (Cannabis indica, americana or sativa)
5. Cocaine
6. Sedatives and tranquilizers (bromides, barbiturates, meprobamate, etc.)
7. Stimulants (amphetamines)

Common Pathways to Addiction

1. Medical habituation
2. Sociocultural habituation
3. Sociopathic personality
4. Psychoneurosis
5. Symptomatic (other psychiatric disorders)

Frequency and Distribution

Estimates of the *prevalence of alcoholism* are usually based on application of the Jellinek estimation formula, which related reported deaths from cirrhosis of the liver to living cases of "alcoholism with complications" and hence to more tentative estimates of "alcoholism with and without complications." Estimates of alcoholism based on other forms of statistics are considered much less reliable (e.g., reported deaths from acute and chronic alcoholism, first admissions to mental hospitals with a diagnosis of alcoholic psychosis, arrests on charges of drunkenness, and admissions to general hospitals for concomitant diseases of chronic alcoholism). Jellinek (1951) analyzed the trend of deaths from cirrhosis of the liver in the United States from 1900 to 1945 and compared them with the trend of deaths from various other causes. The trend of deaths from cirrhosis formed a unique pattern, paralleling deaths from other causes from 1900 to 1915, showing an extremely sharp drop from 1915 to 1920 (including the period of wartime and the first few years of prohibition), followed by a gradual increase to 1933 (the year of the repeal of prohibition) and a more rapid increase subsequently (particularly after 1940).

Using the Jellinek formula, the prevalence of alcoholism (with and without complications) has been estimated for a number of countries and is given in Table I. These estimates of *prevalence* (at a given point in time) vary from less than one per cent of the adult population in Italy to more than five per cent of the adult population in France.

It is interesting to note that these estimates of prevalence based on the Jellinek formula are of the same order of magnitude as those obtained by direct counts of samples of the population in certain countries. Since alcoholism tends to be a chronic disorder, the *incidence* of new cases per year would be expected to be

TABLE I.

ESTIMATED PREVALENCE OF ALCOHOLISM IN VARIOUS COUNTRIES*

	Alcoholics per 100,000 population (20 years and older)	Year	Source
France	5,200	1954	Jellinek (1954)
United States	4,360	1955	Keller & Efron (1957)
Chile	2,960	1950	Popham (1956)
Sweden	2,580	1946	WHO (1951
Switzerland	2,100	1953	Popham (1956)
Denmark	1,950	1948	WHO (1951
Canada	1,890	1956	———
Norway	1,560	1947	WHO (1951)
Finland	1,430	1947	WHO (1951)
Australia	1,340	1947	WHO (1951)
England and Wales	1,100	1948	WHO (1951)
Italy	700	1954	Jellinek (1954)

* From Popham, R. E., and Schmidt, W. (1958) — Statistics of Alcohol Use and Alcoholism in Canada 1871-1956, page 120, University of Toronto Press.

considerably lower (but reliable estimates of new cases cannot be obtained from data currently available), whereas the *lifetime expectancy of alcoholism* should be considerably higher than those of prevalence at a given point in time. In his extensive followup study of a Danish rural population (the island of Bornholm), Fremming found the expectation of alcoholism among males to be 3.4 per cent and among females only 0.1 per cent (i.e., among both sexes 1.74 per cent). He added that "in half the cases the abuse of alcoholism was found to be the expression of a basic mental abnormality, most frequently a psychopathic constitution. Sixteen per cent had been convicted of criminal behavior, an incidence almost nine times as high as occurs in the sample as a whole."

The sex ratio varies somewhat from one country to another, and in North America males have been found to exceed females by five or six to one. The rate of alcoholism also varies greatly in geographical region, and tends to be higher in cities and in certain ethnocultural groups (a consistent finding in North America being high rates in Irish Catholics and low rates among Jews). Only a small part of the alcoholic population will be found on Skid Row, and alcoholics may be found in every stratum of society, the relative frequency in different social classes varying from one place to another. Thus in the Yale group psychiatric census of 1950, it was found that the prevalence of alcoholic psychosis in treatment was found to be inversely related to socio-economic status (increasing progressively as one proceeded down the socio-economic scale). The rates were 15 per 100,000 in classes I and II; 29 in class III; 32 in class IV; and 116 in Class V. At about the same time, national statistics from Britain showed almost exactly the opposite relationship between social class and admissions to mental hospital with alcoholic psychosis or alcoholism (and also deaths from cirrhosis of the liver).

Estimates of the frequency of addiction to narcotics and other drugs are probably much more subject to error than those concerning the frequency of alcoholism. It has been estimated that in 1885 addiction (type unspecified) in the United States was from one to four per cent of the population. It is also said that in recent years the frequency of addiction to narcotics in this country has been in the neighborhood of one in a thousand in the adult population. England estimates only 400 addicts (or somewhere in the neighborhood of 1 in 100,000 of the population). Addiction to other drugs such as barbituates, tranquilizers and amphetamines may be expected to be very much higher, both in these and in other countries; but there appear to be no reliable estimates available.

Family History

There is evidence of unduly high frequencies of alcoholism, psychopathy and criminality among the relatives of alcoholics. In a study of 645 Swedish alcoholics, Amark (1951) found the frequency of alcoholism among their brothers and fathers to be about twenty-five per cent. In an intensive study of fifty chronic alcoholics of North American descent and fifty alcoholics from Zurich, Bleuler (1955) found that in both groups schizophrenia, manic-depressive psychoses, epilepsy and feeble-mindedness occurred with the same frequency in the relatives of alcoholics as in groups of the average population of the same social level. By contrast, alcoholism, neurotic and psychopathic personality characteristics were found much more frequently among the relatives of alcoholics (both blood relatives and husbands or wives) than in the general population.

In Bleuler's study, twenty-two per cent of his American alcoholics and twenty-eight per cent of his Swiss alcoholics came from homes that were broken by death or separation of the parents before the patient reached the age of ten years, (corresponding with a figure of twenty-three per cent losing one or both parents by the same age in a sample of Canadian alcoholics investigated by the present author). In the latter study, the proportion of alcoholics losing *both* parents permanently by the age of ten years amounted to 7.1 per cent, which was over five times as high as expected on the basis of the frequencies with which they lost a single parent.

Personal History

No consistent findings have been recorded with respect to prenatal development, birth difficulties or delayed or deviant early post-natal maturation. However, the quality of the early post-natal environment, in terms of interpersonal relationships, has been recorded as poor in a high proportion of alcoholics and drug addicts. In Bleuler's study, only twenty per cent of the alcoholics in either the North American or the Swiss sample were recorded as spending their childhood with both parents in a favorable home environment, and only about thirty per cent of each sample was recorded as spending their childhood in a favorable home environment (regardless of whether they were living with their own parents or not). In view of the diverse pathways to the syndrome of alcoholism and drug addiction, however, it is not surprising that the adverse early relationships and experiences should be correspondingly diverse. It would therefore be expected that those alcoholics and addicts with a history of neurotic personality characteristics and adjustment would also give a history of an overcontrolling, demanding, anxiety-provoking early environment, whereas those with a lifelong history of antisocial personality characteristics would be more likely to give a history of deprived, rejecting and indifferent early relationships.

The response of the established alcoholic or drug addict to treatment frequently corresponds with his previous school, occupational and economic performance. Those with a tendency towards a previous neurotic adjustment tend to have been conscientious and competitive in school, striving for scholastic, athletic and social success (and striving often to compensate for feelings of inadequacy which they feel in relation to their home situation). Such persons are likely to achieve occupational status and responsibility up to and sometimes beyond the limits of their ability. Prior to the onset of alcoholism or addiction, they may have obtained by their own efforts a residence in one of the select areas of the community and some measure of apparent economic security, but frequently their early background is such as to provide a lasting economic handicap. This group may have an active religious affiliation and is unlikely to have come to the attention of police or social agencies prior to the onset of alcoholism or addiction. Their immaturity in social relationships, however, is frequently reflected in their selection of a mate and in their subsequent heterosexual adjustment which is apt to be unduly inhibited. Various types of wives have been described — the maternal type (combination of domination and mothering); the nagging, deprecatory, hostile type; and the narcissistic, masochistic, guilty type. It has also been noted that there is a higher frequency of alcoholism among the wives of alcoholics than in the general population. There is also a much higher frequency of separation and divorce.

In contrast with this picture of the individual whose alcoholism or drug addiction is superimposed upon a neurotic adjustment is the equally common picture of lifelong antisocial adjustment. The latter individual is likely to have had no interest in school (except in athletics or extra-curricular activities), to have consistently underachieved (in proportion to native ability), to have made an unstable occupational, residential and economic adjustment, and to have a history of truancy, delinquency, and conflict with police or other authorities. In the latter type of person, promiscuity long precedes the onset of addiction. A number remain unmarried and among others there is a high proportion of divorce.

It should be emphasized that, *at the time the alcoholic or drug addict come to psychiatric attention,* the predominant characteristics observed are usually those of the antisocial personality. This may be related to the observation that "the super-ego is that part of the personality that is soluble in alcohol." It is common knowledge that alcohol and many drugs with sedative properties may suppress anxiety, and with it the pangs of conscience and remorse as well as ideals and ambitions for the future. While even a single dose may result in temporary impairment of such higher faculties, it is often said that repeated dosage over a prolonged time is a cause of permanent ethical deterioration. While the latter may be true in a number of instances, however, it is easy to confuse cause and effect, and the repeated use of alcohol or drugs may be secondary to the deliberate abandonment of conformity to social ideals and prohibitions. In any event, the task of treatment includes the establishment of internal controls and ideals and is infinitely more likely to achieve success where this is a matter of reformulating and modifying goals once abandoned than where such controls have never existed.

As a result of an analysis of more than two thousand drinking histories of male alcoholics, Jellinek (1951) described a number of symptoms commonly found in various phases of alcohol addiction. The *pre-alcoholic symptomatic phase* is said to last from several months to two years, and is characterized by occasional or constant drinking for the purpose of producing relief from excessive tension and latterly by an increase in alcohol tolerance so that the drinker requires a larger amount of alcohol than formerly to reach the same stage of sedation. The beginning of the *prodromal phase* is characterized by the sudden onset of "black-outs," or amnesia for a recent period of drinking (also called alcoholic palimpsests). During this phase there is evidence of increasing dependency upon alcohol as a drug, some of the manifestations of this being surreptitious drinking, preoccupation with alcohol, gulping the first drink or two, guilt feelings about drinking, avoiding reference to alcohol in conversation, and an increasing frequency of alcoholic black-outs.

The *crucial phase of addiction* is initiated by loss of control over drinking behavior (or inability to stop), and at the same time the alcoholic begins to rationalize his drinking behavior by means of various "alibis." At about this time his drinking behavior becomes conspicuous, and parents, wife, friends and employer may begin to reprove and warn him. The alcoholic may respond with grandiosity, aggression or persistent remorse and periods of total abstinence. He may change the pattern of his drinking, may begin to drop friends and lose jobs. There is a tendency towards increasing social isolation as his behavior becomes alcohol-centered. There may be a loss of outside interests, a reinterpretation of interpersonal relations, marked self-pity and contemplated or actual geographic escape. At about this time there tends to be a change in family habits involving withdrawal from or increase in social activities on the part of wife and children. The alcoholic meanwhile develops unreasonable resentments toward them and others, becomes concerned with protecting his supply of alcohol, neglects a proper nutritional intake, and is frequently hospitalized for the first time. Metabolic changes often include a decrease of the sexual drive and this may be associated with alcoholic jealousy concerning the wife, or even frankly paranoid delusions of infidelity. At about this time there is a beginning of regular morning drinking.

The *chronic phase of alcohol addiction* is initiated by prolonged intoxications or "benders" which often lead to marked ethical deterioration, impairment of thinking and alcoholic psychoses (the latter in about ten per cent of all alcoholics). The alcoholic now tends to drink with persons far below his social level and may take recourse to "technical products" such as rubbing alcohol. A loss of alcohol tolerance is often noted at about this time and may be related to decreased ability of the liver to accomplish oxidation. Other terminal symptoms described by Jellinek include indefinable fears, tremors, psychomotor inhibitions, obsessive drinking, the development of vague religious desires and failure of the entire rationalization system. At this point the addict admits defeat and is regarded as spontaneously accessible to treatment, although obsessive drinking continues as he does not see a way out.

It has long been known that the habitual consumption of large amounts of alcohol may produce *chronic disturbances of a variety of organ functions,* many of which are related to inadequate intake of vitamins (particularly A, B_1, niacin, C and K). Among the organic complications are the following: cardiac insufficiency, hypertension, a hemorrhagic tendency, atrophic gastritis, cirrhosis of the liver, endocrine lesions (particularly adrenal cortex, thyroid and ovary), lesions of the sympathetic nervous system, peripheral neuritis, and disorders of the central nervous system causing organic brain syndromes (delirium tremens, Wernicke's encephalopathy, "nicotinic acid deficiency encephalopathy," Korsakow's syndrome, etc.).

Addiction to morphine and related substances is also accompanied by gradual moral, intellectual and physical deterioration. The most common *side effects* that are noted are: nausea, vomiting, itching, miosis, lack of appetite, constipation, loss of weight and cachexia. The most common *withdrawal symptoms* of such addicts include: restlessness, nervousness, severe muscular cramps with pain, lacrimation, rhinorrhea, perspiration, yawning, gooseflesh, mydriasis, leukocytosis, hyperglycemia, nausea, retching, vomiting, diarrhea and rapid weight loss (as much as five to fifteen pounds in twenty-four hours). The intensity of withdrawal symptoms reach their peak at seventy-two hours after the last dose and diminish during the remainder of the first week, following which there is only some residual nervousness, insomnia and weakness.

In addiction to barbiturates and other sedatives there is a similar history of increasing tolerance, psychological dependence and physical dependence associated with intellectual, moral and physical deterioration. The predominant signs are those of cortical depression (impairment of intelligence, memory, orientation, consciousness, etc.) and cerebellar dysfunction (nystagmus, ataxia, adiadokokinesis, choreiform movements, dysarthria, tremors). Such effects are cumulative, even with short-acting barbiturates (which are ordinarily metabolized within a few hours), and *withdrawal symptoms* are more dangerous than those of morphine and related substances. After withdrawal, cerebellar dysfunction soon disappears, and patients become apprehensive and weak, with fasciculation of their muscles and a coarse tremor of hands and face. The deep reflexes become hyperactive and there is apt to be insomnia, abdominal cramps, nausea, vomiting, loss of weight, and elevations of temperature, pulse, respiration and blood pressure, together with hyperglycemia and hemoconcentration. There may be postural syncope and between the sixteenth hour and the fifth day after withdrawal there may be grand mal convulsions, together with numerous minor episodes of clonic twitching without loss of consciousness. Whether or not convulsions appear, an acute delirious psychosis may develop.

Mental Examination

From what has already been said concerning the diverse personality characteristics and pathways to alcoholism and addiction to other drugs, the various phases through which the behavior of a single individual may pass, and the diversity of psychiatric as well as somatic complications, it may be seen that such patients present an extremely wide range of manifestations on mental examination at a given point in time. In fact, their appearance, attitude and behavior may undergo dramatic changes within a period of a few hours, in accordance with fluctuation in the body level in the drug upon which they have become dependent (and associated metabolic changes). In the early stages of the addiction or after a small to moderate dose of the drug, the patient may be quite relaxed and sociable, attentive to his appearance or to his environmental situation. After a larger dose of the drug, the symptoms of toxicity appear which may include either stimulation, euphoria and hyperactivity or withdrawal, apathy, disinterest and stupor. Soon after the effects of the drug wear off, the patient is apt to become tense, tremulous, irritable and restless. If relief is not obtained by further dosage, any of the more severe symptoms of withdrawal already outlined may develop.

During times when the patient is relaxed and in good contact with reality, attention may be gained, maintained and directed. Conversation may be spontaneous and replies to questions relevant and appropriate. At such times the patient is quite capable of giving a detailed history of his background and development which may or may not correspond with that obtained from other sources. In either event it will enable some evaluation to be made of the patient's personality characteristics and resources.

Intellectual capacity is distributed over the same range as that found in the general population and there may be little or no evidence of impaired intellectual function, except either (a) following ingestion of a single toxic dose of alcohol or other drug or (b) in the presence of an organic brain syndrome resulting from chronic addiction. In the latter instance there may be quite profound and persistent impairment of orientation (particularly for time) and memory (particularly for recent events).

Illusions, hallucinations, and delusions are *not* present in uncomplicated cases of addiction, but only when the latter is complicated by an acute delirium (which is apt to be accompanied by visual illusions or hallucinations, together with transient frightening delusions of persecution), or by release of a more chronic psychotic process such as paranoid schizophrenia (e.g., with auditory hallucinations and delusions of reference, influence, persecution or grandeur).

Emotional tone and reaction frequently show marked variability. The drug may produce some temporary euphoria, but usually the prevailing mood is accentuated (so that the person who "drinks to drown his sorrows" is apt to finish up by feeling more depressed). There is often a great deal of latent hostility (towards wife, employer, other representatives of authority, or society in general) which tends to be suppressed when the individual is sober but may be released when inhibitions are removed by the drugs or when he is suffering from intense withdrawal symptoms.

There may be preservation of intellectual insight, but careful evaluation will reveal gross impairment of conscience and judgment.

Treatment

Measures adopted in the treatment of established alcoholism or drug addiction may be separated into three main types: (1) disintoxication, (2) deterrents to continued use of the drug and (3) curative measures directed towards the removal of the causes of addiction.

A wide variety of drugs have been recommended in the process of *disintoxication,* which usually involves some combination of the following: (a) withdrawal and/or replacement of the drug concerned, (alcohol may be withdrawn abruptly with temporary substitution of tranquilizing drugs; narcotics may be withdrawn rapidly by means of substitution with related synthetic substances over a maximum of about ten days; barbiturates dosage may have to be reduced very gradually over a period of as long as three weeks), (b) replacement of fluids (glucose in water or saline), especially vitamin B complex and other nutrient substances and (c) a variety of supportive measures, including insulin, ACTH, cortisone, and various stimulants (e.g., amphetamine, strychnine).

Deterrent or suppressive measures are not in themselves likely to be curative. Their value is insuring a period of freedom from the drug, during which it is hoped to apply other measures leading to more lasting remission. Such deterrents may be applied at the individual or at the social level of action and include punitive legislation (heavy fines or compulsory institutionalization), conditioned reflex treatment of alcoholism (to bring about nausea or vomiting on drinking alcohol), and the use of disulfiram (antabuse) or citrated calcium carbamide (temposil), both of which will react with alcohol to produce acetaldehyde, with resulting unpleasant toxic manifestations.

Physical methods of treatment (e.g., electroshock therapy) or administration of tranquilizing or antidepressive drugs may be indicated when symptomatic alcoholism or addiction is associated with a functional psychiatric disorder of psychotic intensity (e.g., overt schizophrenia, manic or depressive syndromes). However, those responsible for the management of alcoholic patients usually stress that it is unsafe to rely on any medication to relieve tension (apart from small doses of sedatives or tranquilizers during the withdrawal period).

A certain proportion of alcoholics and even some drug addicts with a history of neurotic characteristics, considerable social conformity, and an interested family may be considered possible candidates for *psychoanalysis or other intensive psychotherapy.* Those alcoholics and drug addicts with strong antisocial personality characteristics, however, offer no better prospects of response to individual psychotherapy than other persons with psychopathic personalities (or "impulse neuroses"). However, a considerable measure of success has been reported by a number of workers using directive techniques of education, as well as some attempts at insight therapy, with groups of alcoholics and their relatives (particularly wives).

It is considered important at the outset that the alcoholic should recognize (1) that he can never revert to social drinking, (2) that it is unsafe to rely on any other medication to relieve tension and (3) the nature of various compulsive and addictive phenomena.

The lay organization known as Alcoholics Anonymous has a group method of approach to the problems of alcoholism (which may be described as both inspirational and spiritual), in addition to which they function as a social agency in bringing new members (and members who have relapsed) to treatment. They may also be able to help considerably in interpreting the nature of the problem to the individual's family and in enlisting their cooperation in treatment.

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Look for the Good, too

What a different world this would be if all of us took the same delight in discovering people's *good* qualities that we do in exploring their shortcomings! Or, at least, measured the character of others with the same yardstick we use for ourselves.

Usually there are far more good qualities than bad in the people we know. But we don't seem to take the trouble to become conscious of them. We let relatively minor shortcomings upset friendships. We magnify them all out of proportion to their importance. In so doing we make two mistakes: We do our friends an injustice, and we let our own character miss out on developing the enriching gentleness of which it is capable. In his own small way each of us—with a little thought and self-control—can help to *make* this "a different world." *The Little Gazette*

By all means go your own way in life. But do it in the same fashion as you go your own way down a crowded street, without stamping on other people's feet or knocking them into the gutter.
The New Age

NUTRITION

in Medical Practice

—past and present

G. H. BERRYMAN, M.D.
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Have your patients been asking you tough questions about dietary needs? This comprehensive review, and particularly the tables, contain material you need to keep ahead of some of those active lay readers.

ONE OF THE noteworthy accomplishments of preventive medicine has been a great decline in the incidence of diseases such as diphtheria, typhoid, tetanus, and pertussis. However, no physician is deluded into considering these diseases to be extinct. Localized outbreaks or isolated cases do still occur and then serve as a belated reminder of the continuing need for vigilance.

Nutritional deficiency diseases can be viewed similarly. While glossy photographs depicting scurvy, beriberi, and pellagra are still found in medical textbooks, most physicians consider this type of disease to be a relic of the past. Whereas nutritional deficiency symptoms were moderately common two or three decades ago, they have greatly declined with the advent of preventive measures such as the enrichment of certain foods, the use of vitamin supplements, and technologic advances in the production, processing, packaging, refrigeration, and distribution of foods.

Present-Day Nutrition

Despite their decreased familiarity to the physician in medical practice today, nutritional deficiency diseases are not any more "extinct" than those infectious diseases which likewise have become rare. Kwashiorkor, a well-known manifestation of protein deficiency elsewhere,[1, 2] can occasionally be seen in the Western hemisphere as a complication to other primary disease conditions,[3a, 3b] Similarly, the "burning feet syndrome"

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is one which may reflect secondary B-complex deficiency.[4a, 4b, 4c] There is other evidence of the latency of nutritional deficiency diseases. They can be elicited when certain drugs are used in treatment of primary disease. One example is the appearance of pyridoxine deficiency symptoms during semicarbazide therapy of tuberculosis;[5a] the resulting syndrome is analogous to the B-6 deficiency which can be induced when the specific antagonist, desoxypyridoxine, is added to a diet low in this vitamin.[5b] Pyridoxine deficiency symptoms can also appear inadvertently, for example when infants received a feeding formula which was later found to be deficient.[5c, 5d, 5e] The syndrome of pantothenic acid deficiency can be elicited by deficient diet alone[6a] and more rapidly when the vitamin antagonist alpha omega pantothenyl alcohol is employed.[6b] In chronic alcoholism or in steatorrheic disease, several signs of mixed nutritional deficiency may emerge.[7]

These examples are likely to be viewed only as rare case reports or artificially induced situations. Because they are not likely to be encountered in ordinary medical practice, the opinion may persist that nutritional considerations rarely need conscious attention. Indeed, certain measures which are routinely employed in everyday practice are no longer recognized as having a nutritional basis. For example, blood hemoglobin determinations are routinely included in physical exams, and there is no hesitation about prescribing iron and adjuvant agents when low levels are found. If pernicious anemia is encountered, the use of B_{12} is readily endorsed as specific therapy During pregnancy, the need for increased intake of protein, calcium, phosphorus, and vitamin D is not questioned. Following surgery, trauma, or burns, the catabolic loss is acknowledged and requires increased intakes of protein, calories, electrolytes, and vitamins.

These four situations are examples where the rationale for nutritional therapy derives from visible or tangible need. In the first case, the underlying "nutritional anemia" is readily related to symptoms of pallor, weakness, and exhaustion because appropriate laboratory findings in the peripheral blood make an impression. Second, the increased excretion of radio-cyanocobalamin in the Schilling test is tangible evidence of intrinsic factor lack and consequent deficiency of vitamin B_{21}. Third, the presence of a visibly growing fetus indicates an immediate material need for specific nutrients required for growth and for development of bones and teeth. Fourth, a postoperative balance sheet on fluid, protein, calories, and electrolytes shows numerical deficits which call for vigorous replacement therapy.

However, visible signs or tangible needs for selected nutrients such as iron, B_{12}, calcium, phosphorus, protein, and calories do not make those nutrients unique in terms of bodily needs. Other nutrients are involved **invisibly** in those biochemical processes of the cell through which the products of carbohydrate fat and protein catabolism are converted to carbon dioxide and water (Krebs cycle). Thereby, energy (calories) and building blocks (amino acids) are derived for moment-to-moment stages of metabolism. Well-known examples are thiamine (vitamin B_1), riboflavin (vitamin B_2), and nicotinic acid (vitamin G) which are indispensable for the respective functions of carboxylase, flavoprotein, and codehydrogenase enzymes in the cellular processes of oxidation-reduction and hydrogen transport. The post-surgical administration of ascorbic acid to promote wound healing has no immediate connection with its role in the metabolism of tyrosine and phenylalanine, or as a hydrogen donor in the formation of folinic acid (which incidentally is blocked by the "anti-metabolite" aminopterin used in anti-leukemia therapy). Regardless of occasionally dramatic usage for treatment of specific types of anemia, B_{12} and folic acid also function undramatically but continuously at different levels of nucleoprotein synthesis; also in transformylation (folic acid), and in transmethylation (B_{12}). Whether useful or not for nausea and vomiting of pregnancy, pyridoxine (vitamin B_6) is necessary for decarboxylation, transamination, and racemization processes which occur ubiquitously in protein metabolism.

Therefore, an invisible and interrelated balance sheet exists for these "silent" nutrients also, even though visible signs of their deficiency are rarely encountered in medical practice and then only after prolonged deprivation; even though appropriate laboratory methods for detecting pre-deficiency states are rarely utilized except in nutritional research.

TABLE I
INTERPRETATION OF CLINICAL NUTRITION SIGNS

Nutrient	Clinical Sign
Protein	Dependent edema
Vitamin A	Follicular keratosis of arms
Thiamine	Absent achilles tendon reflexes
Niacin	Tongue lesion more advanced than hypertrophy of papillae at tip Reddened tongue Pellagrous dermatitis
Riboflavin	Angular stomatitis Conjunctival hyperemia (circumcorneal injection). Magenta tongue
Ascorbic acid	Red hypermic gums Perifolliculosis
Calories: Obesity	Skin Thickness: Scapulae—Over 30 mm. Lower axillae—Over 25 mm. Height-weight tables—Over 10%
Leanness	Skin Thickness: Scapulae—Under 8 mm. Lower axillae—Under 8 mm. Height-weight tables—Under 10%

Table 2a

Nutrient and Recommended Daily Amount for Adult Male at 3000 Calorie Requirement	Food Groups*
Protein, 70 Gm.	1) Meat, fish and poultry group 2) Milk products 3) Grain products
Calcium, 0.8 Gm.	Milk products
Iron, 12 mg.	1) Meat, fish and poultry group 2) Grain products (whole grain or enriched)
Vitamin A, 5000 I.U.	1) Vegetables (dark green and deep yellow) 2) Meat, fish and poultry group
Thiamine (B^1), 1.5 mg.	1) Grain products (whole grain or enriched) 2) Meat, fish and poultry group
Riboflavin (B^2), 1.8 mg.	1) Milk products 2) Meat, fish and poultry group
Niacin (G), 20 mg.	1) Meat, fish and poultry group 2) Grain products (whole grain or enriched)
Ascorbic Acid (C), 75 mg.	1) Citrus fruits 2) Vegetables (tomatoes, potatoes, greens)

*Food groups on which adequate nutrient intake primarily depends on the American diet.

Because of the absence of common clinical criteria* for marginal deficits of these nutrients, the physician may be inclined to depend upon the diet history as an accessible and practical means for estimation of general nutritional status. He finds, however, that diet listing is quite time-consuming, and soon appreciates that errors are inherent to this method due to inaccuracy of recall. Even beyond those difficulties, there is the occasional individual whose physiologic and biochemical individuality masks unusually high nutritional requirements.

Ultimately, the physician resorts to one of two alternatives. He can simply dismiss nutritional considerations because he does not actually see nutritional lesions and because he does not believe in the possibility of "subclinical" states. Or he may take the opposite tack and prescribe nutritional supplements as "insurance" against the unknown. Which is justified?

One answer to this question lies in the appraisal of the average food habits of Americans. As background, it should be appreciated that in a normal diet certain food groups make a major contribution to the daily quota of essential nutrients, as follows:

Table 2b

Other essential nutrients are derived from the following foods:

Nutrient and Function	Estimated Daily Requirement and Food Sources
B_6 (pyridoxine) — coenzyme for transaminases, decarboxylases, desulferases, and racemases[29a]	1-2 mg.; animal and vegetable foods
B_{12} (cyanocobalamin) — nucleic acid synthesis, thyroid activity, hemopoiesis, ascorbic acid metabolism	2-5 mcg.; animal foods, especially liver, kidney, muscle, and milk products
Folic acid (folacin) — nucleic acid synthesis, biosynthesis of methyl groups, transfer of single carbon units	1 mg.; dark green vegetables, liver, kidney, yeast, and intestinal synthesis
Pantothenic acid — component of coenzyme A which is involved in acetylation and other acylation reactions[29b]	10 mg.; plant and animal foods
Phosphorus — bone and tooth development, functions in many metabolic systems	1.5 times calcium requirement; same dietary sources as calcium and protein
Iodine — thyroid hormone	150 mcg.; iodized salt (less than one-half table salt sold in U. S. is iodized)
Copper — cytochrome, cytochrome oxidase, catalase, tyrosinase	2 mg.; milk and varied diet
Magnesium — catalyzes many cellular reactions,[29c] and is present in bones	300 mcg.; meats, cereals, plant foods, and milk
Fluorine — normal function unknown, but preventive use for protection against dental caries[29d]	Fluorides occurring in plant and animal foods; fluoridated drinking water (not used in all U. S. communities)

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*See Table 1

Food Consumption in Healthy Individuals

In recent years, there have been a number of diet surveys* conducted under federal, state, and university auspices. The results follow a pattern. Women homemakers in four urban communities had calcium intakes of less than 0.3 Gm. in almost one-fourth of the cases studied.[9a] In another study, based on 24-hour recall,[9b] it was found that the calcium content of 23 per cent of women's diets was below 0.3 Gm. Elsewhere (North Central states), an appreciable percentage of the calcium intakes of 402 women was below 0.4 Gm. daily.[9c] These low-calcium diets ranged from an 8 per cent incidence at ages 30-39 to 32 per cent incidence at ages 70-79.

Consonant with the axiom that a diet low in one nutrient will very probably be low in others, it was also found that in a significant number of cases vitamin A, vitamin C, riboflavin, and nicotinic acid dietary levels fell below 3000 I.U., 50 mg., 1.0 mg., and 10 mg. respectively. Diets furnishing less than 40 Gm. protein, 8 mg. iron, 6 mg. niacin, 0.6 mg. thiamine and riboflavin, 30 mg. ascorbic acid, and 2500 I.U. vitamin A were found in all age groups. The authors conclude that there is a need to improve many of the diets at all ages and that this is particularly true of the older age groups.[9c]

In a summary of interregional dietary surveys,[9d] attention has been drawn to low intakes of several nutrients. The following statements are made:

> "Foods eaten by boys aged 13 to 20 years on the average provided adequate or more than adequate amounts of all nutrients except vitamin C, but the girls in this age range had food adequate or high in only 3 nutrients, vitamin A, riboflavin, and niacin. The average intakes of the other nutrients by the girls were either seriously low, as for calcium, iron, thiamine, and ascorbic acid, or borderline low, as for calories and protein."
>
> "The [adult] men had adequate or high average intakes of all nutrients except calories and thiamine which are related to each other."
>
> "The [adult] women had good average intakes of all nutrients except calories, thiamine, calcium, and riboflavin."
>
> "The nutrients most often found to be lower than the recommended amounts in the diets of children and adults in all four regions were vitamins A and C, calcium, and iron."

For a nutrient to be judged "low," the intake was two-thirds or less of the NRC Recommended Daily Allowances, Revised 1958[8].

The pragmatist may question the significance of nutritional "numerology" because tangible signs of nutritional deficiency are not found. In one of these reports it was noted that the incidence of characteristic anatomic signs had only "faint relation to the current nutrient intake, but were fairly plausibly connected with the blood levels of certain vitamins, notably ascorbic acid, vitamin A and Carotene."[9d] However, the absence of gross anatomic evidences of deficiency is to be expected. In the first place, they appear only after prolonged or severe conditions. Even then, there is no necessary correlation between deficient intake of a nutrient and the occurrence of *specific* signs of that nutritional deficiency. Indeed, it is characteristic of many nutritional lesions that they are no different in appearance from certain mucocutaneous changes which can arise non-specifically due to stress factors such as local injury, climate, age, dentition, etc. Of course, whenever the occurrence of these lesions is associated with low dietary intake or a low blood level of the nutrient, a cause and effect relationship becomes more likely.

Regardless of the absence of visible lesions which would be pathognomonic, there are certain segments of the American population in which dietary habits give justifiable cause for concern. These groups are 1) the *adolescent,* 2) the *young adult* who lives alone, and 3) the *aged.*

The Adolescent

In certain geographic areas it was found that, when the criterion of ⅔ of the Recommended Dietary Allowance was applied, 1/5 of the boys' diets provided low levels of calcium, ⅓ low thiamine, ⅓ low niacin, and ½ low ascorbic acid. The girls' diets were even more frequently low — 20 to 40 per cent of the diets were assessed as being low in protein, vitamin A, riboflavin, and niacin, and more than 50 per cent were considered to be low in calcium and ascorbic acid. The conclusion was reached that "the same nutrient deficits occur again and again in all parts of the country in vitamin C, calcium, iron, and vitamin A."[9d]

In a report on urban diets,[10] there is described a sharp drop in milk drinking in adolescent age groups compared to groups age 6-12. In a discussion of teen-ager diets,[11] attention is drawn to low consumption of milk, green and yellow vegetables, and fruits, and possible poor distribution of protein. These characteristics lead to inadequate intake of calcium, vitamins A and C, and amino acids, respectively. Two potential health problems of the adolescent are cited as factors which may be influenced by the state of nutrition: 1) the incidence of tuberculosis and 2) complications during pregnancy.

There are other factors besides dietary levels that influence calcium nutrition, however. Adaptation to low intakes can result (at least in dogs [12a]) in greater net utilizability which may mitigate an apparently deficient intake. On the other hand, various factors [12b] including emotional state[12c] may have an adverse effect upon calcium absorption. Consequently, there is considerable uncertainty about a fixed calcium requirement.* For teen-agers, physical exertion is a factor. Exercise might result in calcium absorption somewhat lower than that implied by the dietary intake. Balance studies have shown a considerable decrease in absorption of calcium in dogs exercised on a treadmill after meals.[13] There may be a parallel in the habits of adolescents who may not only eat irregularly of the wrong types of food, but who often participate in strenuous physical activity. Furthermore, a period of adjustment is apparently necessary before an increased calcium intake is reflected in higher absorption.[14]

Adolescence is a period of accelerated tissue, skeletal, sexual, and emotional development. Adequate nutrient intake would seem to be so directly involved in this multilateral growth that even those who disbelieve the thesis of "full nutrition" must pause to consider the possible effects of low nutrient intake in this age group. For tissue and skeletal growth, requirements are increased not only obviously for calories and protein but also for interrelated vitamins and for calcium and iron. Yet at this age we find overt or secret rebellion against parental supervision and established eating customs. This is an age when it is unthinkable not to be "one of the crowd." Endocrine and emotional changes are often reflected in irregular eating habits which are accompanied by between-meal consumption of "empty calories" or confectionary foods, which make the after-school hangout a popular meeting place. Snacks (which decrease appetite at mealtime) and also fad diets (for reducing) often constitute the main pattern of eating. No better examples of nutritional imbalance could be found even if consciously sought. The consequences to health are not immediately apparent. However, if motherhood occurs at a relatively early age, the cumulative insufficiencies of teenage diets are then complicated by the suddenly increased needs for calcium, phosphorus, protein, and iron. This may have some connection with the high incidence of eclampsia, stillbirths, and malformation described in this age group.[15] Whether or not direct consequences can be actually proved in either of the sexes during teenage or early adulthood, one must acknowledge greater cause for doubt than complacency.

The Young Adult

No survey data seem to have been reported specifically on the numerically large group of young adults who pursue business careers in the city and, living alone, eat in restaurants and cafeterias. Their choice of foods is often determined by the state of their finances and by the pressure of social and business activities. They may skip breakfast because of oversleeping; they have coffee breaks and high carbohydrate snacks; they hurry their lunches because of other interests; and in the evening they may periodically decrease their appetites by party fare that features cocktails and canapes. Occasional "square meals" of steak, potatoes, and salad give only false assurance, as can be seen from the nutritional content of a meal that might be bought by such an individual.

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*The present uncertainty about a fixed calcium requirement arises from recent biochemical findings in bone metabolism. For example, it has been long assumed that the role of vitamin D is directly concerned with stimulation of bone formation. Recent evidence indicates that its role is considerably different from that. Rather, an indirect role now appears likely via mobilization into blood of the calcium and phosphorus stored in bone reservoirs and via an acid-producing effect in the intestine which results in greater absorption of calcium and phosphorus.

Other nutrients may be indirectly involved in bone metabolism — for example ascorbic acid, which, by its activity in the hydroxylation of proline and lysine during collagen formation may aid in preparing the sites for mineralization in bone. The B-vitamins may also be involved non-specifically through co-enzyme activities at the cellular level.

Studies in patients indicate that while adjustment to low calcium intakes often occurs in the adult, nevertheless rats in the early phases of life show changes histologically similar to osteoporosis when they are fed a low calcium diet. Conversely, the administration of very high calcium levels to osteoporotic patients eventually results in a positive calcium balance after a relatively long period of administration. Thus, two extremes are possible in the biologic sense.[31]

TABLE 3

MENU	NUTRIENT COMPOSITION OF MEAL		
Prunes	Protein	26.3	gm.
Roll & Butter	Vitamin A	830	I.U.
Broiled Steak	Vitamin C	11.7	mg.
Diced fried potatoes	Vitamin B_1	.41	mg.
Sliced tomatoes & lettuce	Vitamin B_2	.68	mg.
Brownie	Niacin	8.50	mg.
Tea with sugar	Vitamin B_6	.24	mg.
	Vitamin B_{12}	(negligible)	

While the diets of young adults, aged 16-20, have been surveyed in Rhode Island, West Virginia, and Idaho, this is not the specific age group referred to. However, the trends found in this group are somewhat indicative of the nutritional characteristics likely to be found in the early twenties. It was reported that iron and thiamine were markedly low for the girls and that calcium and vitamins A and C were low for both sexes.[9d].

It is seen that the pattern of deficient intake which often begins during adolescence may then be continued for a number of years as early adulthood is reached and careers are followed in the city.

In Older Age

In the aged, there is at least one special problem that is related to previous intake of nutrients. The presence of osteoporosis can be expected to delay the healing of fractures caused by a fall or other trauma. Studies on calcium and phosphorus intake among 33 old, institutionalized patients[16] disclosed wide variation in calcium intakes, even though milk and cheese were available ad libitum. X-ray studies of the vertebral column were used to determine the incidence of osteoporosis. There was a marked correlation between low calcium and phosphorus intake and the presence of osteoporosis.

Similarly, Nicholas and Wilson[17] found that low calcium intake was a frequent finding in 55 cases of osteoporosis. All were over 50 years of age; 46 were female. It was determined (by dietitian's observation) that 18 who drank no milk had an average calcium intake of only 0.5 Gm. daily. Twenty-two averaged 0.5 to 0.8 Gm. daily.

There are undoubtedly many factors involved in calcium absorption, deposition, and turnover, and still others involved in skeletal changes in the aged. Yet it seems very likely that calcium must play a dominant role, along with anabolic hormones, vitamin D, and other internal or external factors. However, for reasons of personal choice or economy, foods which are rich in calcium are frequently not obtained in adequate amounts by the older age group. A study of the calcium intakes of urban families indicated that older women were more likely to avoid milk than men.[10] Poor dietary characteristics are also transmitted to other members of the family who are associated with the aged individual. From a survey of family food consumption data originally compiled in 1955,[18] it has been recently calculated that the individual nutritional intake was poorer in *all* members of families where the homemaker was 60 years of age or older. There is a growing proportion of such households.

In Perspective

Beginning with adolescence and extending through old age, there are numerous personal habits and socio-economic factors which not only prevent ideal nutrient intake but which cause marked defection from the Recommended Daily Allowances NRC.[8] Yet there is little or no evidence of gross nutritional disease as such. Shall the physician suggest, recommend, or prescribe nutritional supplementation on grounds which are only theoretical? Those who question this necessity can find support in reports that adjustment to low levels of nutrient intake does occur[19a, 19b] and in the rareness with which signs of overt deficiency are seen. However, the same question might conceivably be raised about the necessity of vaccination for diseases which have a low national incidence. There, an affirmative position is justified on grounds of prevention. An affirmative position on nutrition may also be justified on grounds of recommendations which have been drawn up by experts in the field of human nutrition (Food and Nutrition

TABLE 4

CHECK LIST FOR A SATISFACTORY DIET

Check list standard	Meeting standard percent	Not Meeting standard percent
One serving daily of lean meat, fish, or poultry	66	34
One pint of milk or its equivalent	57	43
Four eggs weekly	74	26
One portion daily of enriched or whole grain bread or cereal	100	----
One serving daily of citrus fruit, tomato or fresh salad	60	40
One serving daily of yellow or leafy green vegetable	41	59
One serving daily of another vegetable or fruit	90	10

(Reference—anon)

TABLE 5

AVERAGE PERCENTAGE OF NUTRIENTS LOST DURING COOKING

	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Meats	35	20	25	----
Meats plus drippings	25	5	10	—
Eggs	25	10	0	----
Cereals	10	0	10	----
Legumes	20	0	0	----
Vegetables—leafy green and yellow	40	25	25	60
Tomatoes	5	5	5	15
Vegetables, other	25	15	25	60
Potatoes	40	25	25	60

(Quoted with permission from reference #30)

Board, NRC).[8] That the external appearance of health may hide the results of dietary insufficiency is shown by the rejection rate of presumably "healthy" volunteer donors. Disqualification for low hemoglobin* occurred in 10.9% of 22,675 prospects. This constituted more than one half of the total rejection rate for all causes (21.1). The distribution of low hemoglobin disqualifications was as follows: 7.3% of 17,480 Caucasian males, 22.4% of 2,165 Caucasian females, and 23.5% of 3,030 Negro males.[20]

In an official review (AMA Council on Foods and Nutrition)[21] it is stated that dietary supplements are not required "if the diet contains the key food groups in sufficient amounts." It is also pointed out that "the proper selection and preparation of foods are important to the achievement of an adequate diet." However, judging from the results of dietary surveys cited, and from our knowledge of the eating habits of various age groups, we are hardly reassured that these stipulations apply invariably to all individuals at various ages, occupations, and economic levels. Furthermore, there are losses in food values due to cooking which add to this uncertainty.

Those who are engaged in school lunches, health education, dietetic and nutritional pursuits are correct in emphasizing a fundamental need to improve diet patterns. Whenever it is feasible to improve the diet, this should indeed receive

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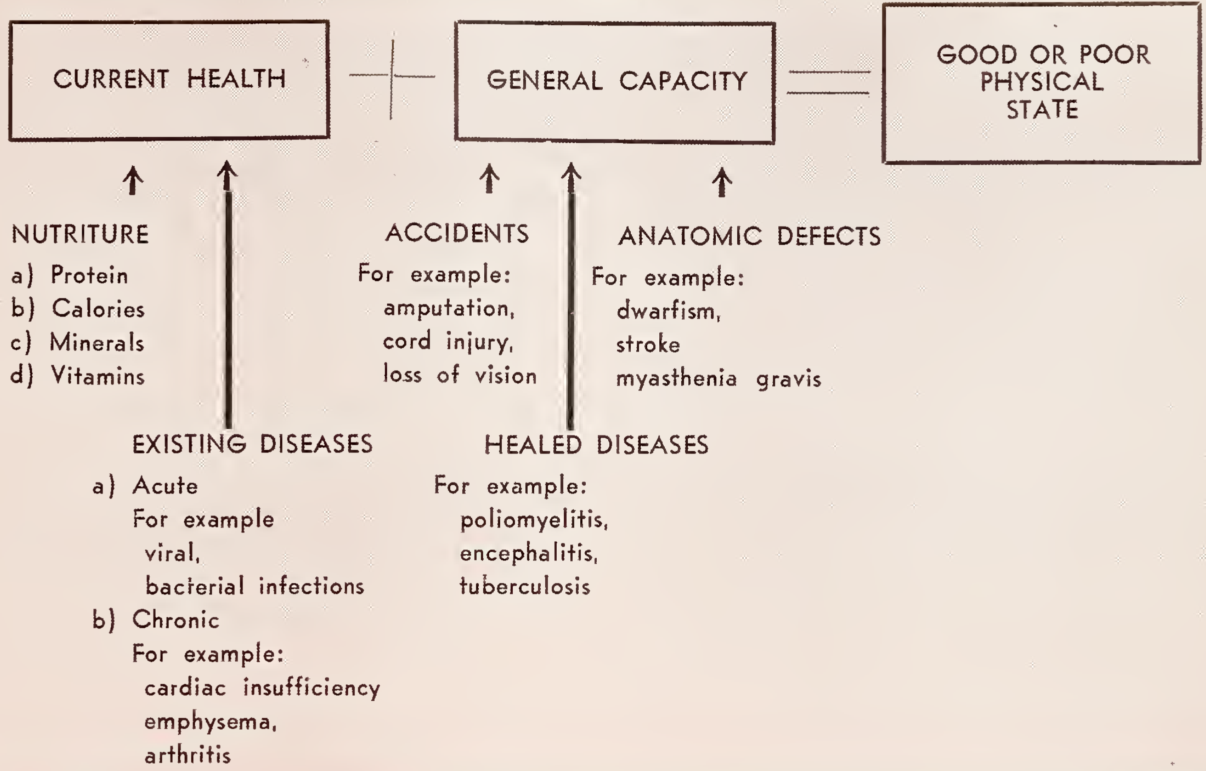
*Copper sulfate specific gravity below 1.055 for men and below 1.053 for women.

Table 6


CURRENT HEALTH
+
GENERAL CAPACITY
=
GOOD OR POOR PHYSICAL STATE
NUTRITURE
a) Protein
b) Calories
c) Minerals
d) Vitamins
ACCIDENTS
For example:
amputation,
cord injury,
loss of vision
ANATOMIC DEFECTS
For example:
dwarfism,
stroke
myasthenia gravis
EXISTING DISEASES
a) Acute
For example
viral,
bacterial infections
b) Chronic
For example:
cardiac insufficiency
emphysema,
arthritis
HEALED DISEASES
For example:
poliomyelitis,
encephalitis,
tuberculosis

primary attention. There is some question, however, about tractability where questionable food habits are concerned. For example, the headstrong attitude of adolescents, as well as their eagerness to be "one of the crowd," is not a promising situation for discussion of so prosaic a subject as food habits. Second, the young, single adult is rarely concerned about matters of health (when business success and social pleasures preoccupy his existence). Third, in the aged, the eating customs of a lifetime are difficult to change, and it is a bother to go to the extra trouble involved in getting or preparing a well-rounded diet. Frequently, there are difficulties in chewing and digestion which make a bulky and diversified diet impractical for old age. Fourth, in the intermediary age groups one may ask — since so little impression has been made by the well-documented dangers of obesity[22] in relation to cardiovascular degenerative disease — is it likely that a revision of eating habits can be brought about for numerologic reasons (i.e., theoretically ideal levels of nutrient intake)?

It seems reasonable to conclude that, in any instance where "teaching new food habits" is more a theoretical than a practical objective, the Recommended Daily Allowances[8] may be brought within reach by the utilization of dietary supplements. This conclusion is consonant with the principle that preventive measures as well as therapeutic measures have established places in medical practice. While therapeutic measures are justified primarily on the strength of specific findings, preventive measures are usually employed on the strength of calculated likelihood. Vaccination is employed as "insurance;" so may nutritional supplementation be justifiably employed at the judgment of the physician.

The conclusion that nutritional supplementation has a place in medical practice is tenable for the variety of reasons presented in this communication. This does not detract from the thesis that basic correction and improvement of food habits should be attempted wherever and whenever possible.[23]

Nutrition in Disease

In the presence of disease, special attention is directed to nutritional requirements which are usually increased by the nature of specific illness or by the non-specific factors which enter. However, there is one preliminary point which deserves consideration. There is a likelihood that the patient may previously have been consuming a diet of borderline nutritional adequacy. Consequently, there may be a minimum "reserve" at the onset of disease. Indeed, general resistance and recuperative ability may be conditioned by the state of nutrition.

The presence of subacute or chronic disease produces special nutritional problems for the reasons shown.

I. CONDITIONS INVOLVING REDUCED VARIETY OF FOODS

- Special Diets
  - Duodenal or gastric ulcer
  - Gallbladder disease
  - Atherosclerosis
  - Gout
  - Obesity
    - a) Fad diets b) Periodic fasts
- Alcoholism and Drug Addiction
- Adentia
- Anorexia
- Pre- and Postoperative States
- Psychiatric States
- Nausea

II. CONDITIONS INVOLVING IMPAIRED ABSORPTION OF FOOD

- Vomiting
- Diarrheal Disease
- Geriatrics (lack of hydrochloride and enzymes)
- Shortened Gastrointestinal Tract (gastrectomy, ileostomy, colectomy, etc.)
- Liver Disease (impaired absorption of fat-soluble vitamins, especially vitamin K)
- Exposure to Toxic Agents

III. CONDITIONS INVOLVING INCREASED EXCRETION OR LOSS OF NUTRIENTS

- Diarrheal States
- Polyuria
- Fistula
- Menorrhagia and Other Hemorrhage

IV. CONDITIONS INVOLVING INCREASED REQUIREMENTS OF NUTRIENTS

- Fever and Otherwise Increased Metabolism
- Liver Disease
- Chronic Infection (producing anemia)
- Fractures
- Pregnancy and Lactation
- Rapid Growth
- Post-surgical or Post-traumatic Repair, Including Burns
- Malignancy
- Certain Therapeutic Regimens Involving Drugs Known to Interfere with Nutrients

While these specific circumstances increase nutritional requirements, there are also some non-specific factors which are secondary to the circumstances of hospitalization. These have an effect upon the patient's intake of food, but the busy attending physician may not be aware of them.

1) Depression, fear, anxiety (resulting in decreased desire for food and reflex decrease in appetite)
2) Immobilization (tendency towards negative protein and calcium balance) (depressed appetite)
3) Unfamiliarity with foods on menu
4) Unaccustomed schedule for meals
5) Lack of appeal of large quantity cooking

It is true, of course, that some of the foregoing problems are circumvented by dietetic supervision and by social and religious counsel. However, despite excellent planning and serving of food, the patient's actual intake of nutrients is often assumed to be higher than it actually is. The food on the hospital tray, while nutritionally adequate, well cooked, and well served, may not find its way into the patient. Several reports[24a, 24b, 24c] describe the problem.

In Perspective

For reasons related to 1) the specific disease, 2) the non-specific accompaniments to disease, and 3) the institutional routine and schedule, there is considerable likelihood that nutritional supplements are advisable for most hospitalized patients and for many non-hospitalized patients who have disease of more than short duration.

Recently, there has been a desirable emphasis on the potential toxicity of highly excessive quantities of vitamins A,[25a, 25b] D[26a, 26b] and K.[29] Therefore, when the physician wishes to include nutritional supplements in his recommendations, he should be aware of the differences between therapeutic formulas (which provide from three to five times the Recommended Dietary Allowance) versus the maintenance type of formula (which provides quantities of nutrients closer to theoretically desirable daily intakes).[28]

> Water, air and cleanliness are the chief articles in my pharmacopoeia.
>
> *Napoleon Bonaparte*

TABLE 8

HOSPITAL #1

Per Man Per Day	Protein	Fat	Carbohydrates	Calories
Food served to patient	75	95	358	2,628
Food actually ingested	54	73	239	1,856
Food left on plate	21	22	119	772
Food never obtained and kitchen wastage	102	71	300	2,279

HOSPITAL #2

Per Man Per Day	Protein	Fat	Carbohydrates	Calories
Food served to patient	86	104	345	2,700
Food actually ingested	74	93	276	2,272
Food left on plate	12	11	69	428
Food never obtained and kitchen wastage	70	40	194	1,435

TABLE 9

VITAMIN	SUGGESTED DAILY AM'TS FOR MAINTENANCE (AVERAGE ADULT)	SUGGESTED DAILY AM'TS FOR THERAPY (AVERAGE ADULT)
A	5000 I.U.	
D		
Thiamine	1.0 - 1.6 mg.	10 mg.
Riboflavin	1.5 - 1.8 mg.	10 mg.
Niacin	17 - 20 mg.	100 mg.
Ascorbic Acid	75 mg.	150 - 300 mg.
Pyridoxine	1 - 2 mg.	2 - 5 mg.
Folic Acid	0.5 mg.	1 - 5 mg.
B_{12}	2 - 4 mcg.	5 - 10 mcg.

Summary

Nutritional status is difficult to assess in medical practice. While gross deficiency lesions are only rarely encountered, this does not necessarily reflect satisfactory dietary intake in all segments of American populations. In the first place, actual signs or symptoms of nutritional deficiency usually occur only after protracted or severe dietary deficiency or as a secondary complication to primary disease. Secondly, records of dietary intakes are not reassuring. Assessment of the food intakes of various population groups in different parts of the country indicates that in all age groups and at all economic levels there is an appreciable number of individuals who do not obtain the selection or quantity of key foods which are ordinarily needed to assure adequate nutrition.

At certain stages of life there seems to be a definite likelihood that dietary insufficiency may be common. Concern over the food habits of adolescents, young career adults, and the aged arises from a knowledge of their food intakes and habits. In each instance, there is foreseeable need for calcium in particular and also for other nutrients such as iron, vitamins A and C, and protein. These essential nutrients are often supplied inadequately by the diet patterns characteristic of these age groups.

Whenever dietary adequacy is questionable, two corrective measures are improvement in food habits and addition of nutritional supplements. While the former is more basic, the latter may be more practical. Whether or not nutritional "insurance" is desirable in the form of a nutritional supplement is a decision which the physician should reach by an estimate of the patient's habits, station, age, and health.

Certainly, in the presence of disease vectors an increased awareness of additional nutritional requirements is an essential part of good medical care.

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They only earn their freedom and existence who daily conquer them anew.—Goethe

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EGG WHITE SYNDROME (biotin deficiency syndrome)

The long continued ingestion of the specific protein contained in the albumin of raw eggs results in the interference of absorption of factors in Vitamin B complex, especially the biotin. A glyco-protein, avidin, in raw egg white unites with biotin to form a stable compound that cannot be broken down by proteolytic digestion. Avidin is thus the first known example of an anti-vitamin. Ample experience in clinical studies suggests that biotin deficiency is the cause of seborrheic dermatitis in young infants. When this condition is present, food high in biotin content—such as liver, egg yolk, kidneys, and yeast—are indicated for the nursing mother as well as for the infant. The excessive use of raw egg white should be avoided.

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Treatment of the Sexually Incompatible Family Unit

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Mechanical or psychic sexual difficulties often threaten what otherwise could be a satisfactory and productive marriage. The family physician, because of his rapport with the couple in trouble, is in an ideal position to investigate the situation and offer therapeutic suggestions. This article is somewhat of a sequel to a perhaps controversial one by the same authors in MINNESOTA MEDICINE for January, 1960.

IN THE PAST, any attempt to treat the sexually incompatible family unit has encountered grave difficulties due to the social and religious taboos associated with sexual maladjustment. The fog of misinformation surrounding sexual response has maintained these taboos into the current decade. It has been virtually impossible to direct the family unit with sexual problems to the physician, psychiatrist, psychologist, clergyman, and/or marriage counselor in time to accomplish significant preventive therapy. However, with the recent marked increase in the sociologic desire to maintain a more closely-knit family unit, in a culture where environmental circumstances tend to separate the family interests, marital partners now seek assistance more readily when sexual incompatibility threatens the total existence of a desired marriage.

In the field of sexual response, the physician has been provided with little scientific information upon which to base evaluation or treatment. In addition, a popular medical misconception exists that a patient will not reveal sufficient sex-history background for effective therapy. Many physicians who would like to fit sex counseling within the framework of their practice either avoid the entire issue or refer the patient to other consultive sources.

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Arbitrarily removing this type of counseling from the province of the physician is doubly unfortunate. First, a sex history can be obtained in much the same manner employed to secure any medical history. Emphasis should be placed upon understanding (which precludes moral judgment) and a constant awareness of the possibility of the patient's vocal misdirection. Second, although referral to other counseling sources is frequently indicated, the fact remains that many family units refuse to consider discussing their intensely personal problems other than with the trusted individual whom they have **initially** petitioned. Thus, if referral is a constant procedure, an opportunity to provide help in a distressed marriage has been lost.

Clinical application of some of the previously published studies in the basic evaluation of the human sexual response has been summarized to assist in (1) recognizing the sexually stalemated family unit, (2) determining areas of incompatibility and (3) developing therapeutic approaches applicable within the routine demands of a varied practice.

A patient with sexual distress may either define the problem directly, or may initially describe such symptoms as fatigue, "nerves," pelvic pain, headaches, or any other complaint for which specific pathologic changes cannot be established. The interviewer must anticipate conscious vocal misdirection when sexual taboos exist, or where there is a personal desire to fix blame on the marital partner.

For example, the female experiencing major dissatisfaction with, or seeking permanent dissolution of, a marriage state (for innumerable personal reasons) may purposely obscure her basic antipathies by describing gross sexual irregularities on the part of her marital partner. When the husband is the partner who wishes "out" of the marriage, the pressure of partial sexual withdrawal (or even complete sexual refusal) is often employed. At this point, request for medical consultation is usually made by one or both marriage partners, solely to justify condemnation of what is termed the mate's sexual unfairness or inadequacy.

The state of marital incompatibility that brings the couple to medical consultation need not always be primarily of sexual origin. Sexual incompatibility may well be the secondary **result** of marital disagreement over such problems as money, family policy, relatives or child care. Such areas of dispute may easily undermine any poorly established pattern of sexual adjustment. The withholding of the privileges of the marital bed is frequently used as a form of punishment in retaliation for considered misdeeds in completely extraneous areas. When a preliminary history reveals such a situation, the physician must decide whether he wishes to carry the full, time-consuming burden of total marriage counseling in social readjustment. If referral is in order, the physician may then limit his participation purely to medical and/or psychosexual concerns.

Probably the major factor of effective diagnosis and counseling, not only within the wide field of sexual maladjustment but within the total framework of the specialty of marriage counseling itself, lies in gaining access to and rapport with **both** members of the family unit. Of almost comparable importance is the need to acquire accurate and detailed sex histories.

Sex histories must accurately reflect details of early sex training and experience, family attitudes toward sex, the degree of the family's demonstrated affection, personal attitude toward sex and its significance within the marriage, and the degree of personal regard for the marital partner. While the actual nature of the existing sexual difficulty may be revealed during an early stage of history-taking, the total history as it discloses causation and subsequent effect provides the basis for a most effective means of therapy.

Since the clinical incidence of male impotence and female "frigidity" far exceeds other sexual difficulties encountered in the office of the general practitioner, the discussion has been limited to these major problems of sexual distress.

Impotence

From a purely physiologic point of view, there are three types of male impotence encountered during clinical consultations on the problems of sexual maladjustment: Type I (inadequate erection), the man who either cannot achieve an erection or, if erection is accomplished, maintains it only fleetingly, soon losing the erection, usually without ejaculation; Type II (premature ejaculation), the man who ejaculates shortly after an erection is attained, or frequently before, during or immediately after mounting is accomplished; Type III (nonemissive erection), the man who cannot accomplish a seminal emission while the penis is contained within the vagina.

Impotence is rarely, if ever, the result of lesions of the posterior urethra. Eliminating the possibility of spinal-cord disease or certain endocrinopathies such as hypogonadism or diabetes insipidus, the total history should be scrutinized for the omnipresent signs of the phychogenic origin of the specific type of male impotence.

When taking the history in Type I impotence (inadequate erection), emphasis should be concentrated on the timetable of symptom onset. Has there always been difficulty, or is loss of erective power of recent origin? If recent in origin, what specific events inside or outside the marriage are associated with onset of symptoms? Are there any masturbatory difficulties? Is there a homosexual background?

Further questioning should define the male's attitude toward his sexual partner. Are there real feelings of rejection, not only for the marital partner per se, but for the total female? Are there sexual demands in excess of his ability to comply? Is there sexual disinterest due to the partner's repellent physical or personal traits, such as excessive body odor or chronic alcoholism?

A Type II (premature ejaculation) history should concentrate more on established patterns of sexual expression. Does this rapid ejaculatory pattern date from teen-age onset of heterosexual activity? Is there a significant history of exposure to prostitute demand for rapid performance during teen-age years? Is this the usual means of sexual expression practiced by his level of society wherein the female role is considered to be purely one of service to the male demand?

The Type III history (nonemissive erection) should explore the permanency of the sexual pattern. Has the male always been unable to ejaculate during intercourse? Are nocturnal emissions frequent, especially after heterosexual encounters?

There are a few additional points that might be emphasized parenthetically. A high incidence of convertive homosexualism and chronic alcoholism is present in Type I impotence. Type II males have a high interest rate in heterosexual activity (despite their inadequacy as sexual partners) because they achieve rapid ejaculatory satisfaction. Type III impotence provides complete satisfaction in heterosexual encounter for the female partner, but a problem of infertility confronts such a marital unit.

The basic psychotherapeutic approach in Types I and II impotence is one of creating and sustaining self-confidence. In both instances, the wife should be made an active member of the therapeutic team. Pertinent details of anatomy, physiology and psychology must be explained to her satisfaction. The rationale of treatment, together with an explanation of stimulative techniques, must also be discussed at length.

Manual penile manipulation with varying degrees of intensity and duration must be individually employed by the female partner. The Type I male (inadequate erection) should be exposed to long periods of manual stimulation in a sensitive, sexually undemanding, but physically relentless fashion. The Type II (premature ejaculation) husband should be manually stimulated for short, controlled periods with stimulation withheld at his own direction as he feels ejaculation to be imminent. The shaft of the penis should be well lubricated to reduce cutaneous sensation.

This "teasing technique" may fail frequently. However, the family unit should be encouraged to return to the technique repetitively until the male's obvious stimulation or improved control leads to the next therapeutic step. A female superior mounting, immediately converted to a nondemanding, lateral resting position, will provide the family team with the opportunity to practice coital stimulation and/or coital control. At the same time, this technique emphasizes the family-unit approach to the problem. From this stage of physical therapy, psychogenic support and family cooperation will reclaim many Type I or II impotents.

The problem presented by Type III impotence is primarily one of infertility rather than sexual incompatibility. Family-unit sexual exposures should be primarily directed by female demand as to frequency or duration. The basic therapy should simply consist of reassuring both husband and wife that their problem is of little clinical consequence. The infertility concern specifically connected with this variant may be easily overcome by artificially inseminating the wife from her husband's semen obtained by masturbation. Since psychotherapy has produced few positive results in this type of impotence, the general approach should be only one of reassurance and the dissemination of information.

Frigidity

Frigidity is a term that should rarely be employed in the presence of patients. The popular connotation of the word seems to presume an irrevocable situation. The maximal meaning of the word should indicate no more than a **prevailing** inability or subconscious refusal to respond sexually to effective stimulation.

Misconceptions too frequently occur when overdependency is placed upon the word "frigidity" as a diagnostic entity. A woman is not necessarily lacking in sexual responsiveness when she does not experience an orgasm. Therefore, the achievement of orgasmic response should not be considered the end-all of sexual gratification for the responding female. Nevertheless, women unable to achieve an orgasmic level of sexual response have been labeled frigid, not only by their marital partner but by consultive medical authority.

Many women are emotionally satisfied through the warmth of mutual sexual response or achieve great sensual pleasure by providing the anatomic and physiologic means of satisfying their partner. However, there remain a large number of women who experience a persistently high degree of sexual tension but, for unidentified reasons, are not able to achieve a satisfactory means of tension release.

When the label of frigidity is suggested, or when definite lack of female sexual responsiveness or sexual satisfaction is established, two investigative areas should be explored. The primary area reveals the presence of actual psychologic and/or physiologic inability to respond to sexual stimulation. The secondary area defines the existence of a sexual incompatibility caused by misunderstanding that results from a variance in the sex-tension demand between the marital partners.

Three positive indications for a background of psychologic distress can be developed by careful history-taking in the following areas:

1. Attitude toward sex and its significance within the marriage.
2. Degree of personal regard for the marital partner.
3. Fear of pregnancy.

Existing negative pathologic "attitudes toward sex" should be pursued by careful questioning in the following areas:

1. Early sexual training and experience.
2. Lack of exposure to demonstrated affection.
3. Subjection to attempted, or successful, homosexual overtures.
4. Other traumatic sexual experience resulting in blotted or curbed natural responsiveness.

The second sign of psychologic distress (personal regard for mate) is often reflected by the female's disinterest and lack of cooperation with the counseling physician. When essential indifference toward a marital partner has been exposed, the existence of a basically unwanted marriage or a marriage undertaken without intelligent preparation or emotional maturity is a real possibility.

When the third indication (fear of pregnancy) is developed, the therapeutic approach is obvious to the counseling practitioner. Fortunate results are usually far more easily achieved in pregnancy-phobia situations than in either of the other two areas of psychosexual withdrawal.

When the nature of the psychologic state of sexual unresponsiveness has been adequately established, referral may be advisable in those situations in which long-established and deeply ingrained causation indicates intensive therapeutic time-demand. However, if direct handling is the logical choice of action, therapy may be initiated, following the marital unit's acceptance of conclusions developed during the diagnostic sessions.

Female sexual responsiveness may depend

upon establishment of the following therapeutic framework:

1. Assurance that social or phsyiologic abnormalities do not exist.
2. Affirmation that sexual expression represents an integral basis for sharing within the marriage.
3. Orientation to male and female sexual anatomy.
4. Development of a mutually stimulative sexual pattern adapted to the backgrounds of the marital partners.
5. Encouragement of gentleness and sensitivity in the male partner's approach to sexual encounter.

It is most important that the unit's mutual effort toward maximal female sexual responsiveness should be accompanied by female **vocalization** of the following: specific sexual preferences; desired zones of erogenous stimulation; choice of coital positioning; and appraising of the male partner when female pleasure responses are achieved. The family unit should be taught to consider moments of individual preference for sexual encounter. Experimentation with varieties of time, place and sexual techniques should be made in order to achieve the necessary mood most conducive to the female's successful sexual response. It is well to bear in mind that the two major deterrents to basic female sexual responsiveness are **fatigue** and **preoccupation.**

When the inability of the female to respond sexually is primarily physiologic in character, therapy fits easily within the province of the medical practitioner. A history indicating pain or other physical displeasure during sex play and coitus certainly suggests need for physical examination. If anatomic variants, such as a severely retrodisplaced uterus causing severe and constant dyspareunia with deep penile penetration are revealed, subsequent mechanical or surgical adjustments or both may then be developed. The simple expedient of teaching the family unit proper positioning for coital activity may remove the female partner's distress. It should be noted, however, that a high percentage of physiologic-based problems begin as the result of ignorance of effective sex techniques and/or of male and female sexual anatomy.

A difference in the degree of sex-tension demand between husband and wife, suggested earlier as the second major investigative area, poses no grave problem to the counseling physician. However, it should be emphasized that a low level of sexual demand is only in relative comparison to a higher tension partner. In no sense does low-level demand necessarily connote either inability to respond sexually or homosexual tendency. Yet, variation in marital partners' sexual demand is a frequently encountered cause for misunderstanding between members of sexually "incompatible" marital units. The results of such a situation are varied. There may be conscious sexual withdrawal by the low-response partner, developing from a sense of personal inadequacy or from a wish to punish what is considered as excessive demand. There may be deep resentment or a sense of rejection felt by the partner wishing a higher degree of sexual participation in the marriage.

The marital unit's understanding and acceptance of a difference in sexual tension demand is far more important than the determination of their specific role-playing and its causation. The higher level of demand may well belong to either partner. Feelings of sexual inadequacy, disgust or withdrawal may be corrected by education of each mate to the other partner's individual, highly personal, sexual requirements. Thereafter, it only remains necessary to adjust the acknowledged differences in sexual tension to a mutually acceptable plan for effective release of the higher level of demand.

The lower level of sex-tension response in the partner with lesser demands usually cannot be raised appreciably to a permanently workable degree. However, it has been frequently noted that the relief of inhibitions of the lower-tension partner (once the family-unit problem is understood) may be marked by a more receptive, or even anticipatory, participation in family-unit sexual activity.

Summary

Taboos associated with sexual maladjustment have interfered with intelligent treatment of this problem. When these taboos are overcome, the family physician is in a favorable position to give counseling to distressed marital partners.

A detailed sex history is of prime importance

in evaluating the situation for the proper therapeutic approach. The physician also should look for physical abnormalities that may interfere with successful sexual techniques.

Inadequate erection, premature ejaculation and nonemissive erection are the three main forms of male impotence. Different treatment is needed for each type. Education of the wife in stimulatory procedures can be of great help.

Female frigidity may assume a number of degrees and forms. Some women are satisfied by emotional sexual feelings, but others require strong physical sensations for satisfaction. Female sexual responsiveness depends on many factors, and a thorough history and careful therapeutic approach are necessary in many cases.

The combined interest of clergymen, marriage counselors, psychiatrists and psychologists may be needed to solve sexual problems. The advice of the initially consulted family physician, however, is a most important potential source of relief in marital sexual maladjustment.

WHAT'S YOUR DIAGNOSIS?

A 61 year old, white, married female was admitted to the hospital because of abdominal pain of six weeks' duration. The pain, low in the abdomen, was of moderate intensity, dull in character, with no radiation. The patient noticed that the pain increased when she was lying down. Shortly after the symptoms appeared she had discovered the presence of a mass in her lower abdomen. There had been no abnormal vaginal discharge but she had noticed some soreness and engorgement in her breast.

The past history revealed that she had a partial oopherectomy, a left salpingectomy, and an appendectomy at age 28, nd a cholecystectomy at age 33.

The menstrual and menopause history was entirely normal.

The physical examination was negative except for the following abdominal and pelvic findings: there was a fixed mass in the lower abdomen about the size of a 6 months pregnancy. It gave the impression of being fluctuant. The entire area was slightly tender. Pelvic examination revealed a normal vagina and cervix. The uterus was identified as being normal in size but was displaced by the mass.

The urine examination was negative. Hemoglobin and white count were normal. Sedimentation rate 91 mm/1 hr. Fasting blood sugar 77 mg percent. Prothrombin time 15.5 seconds with normal control of 13 seconds. The Papeniceleau smear was negative for malignant cells though there was a greater number of cornified cells than was to be expected in a woman of this age.

O. F. Robbins M.D. and C. Vasquez M.D.

What's your diagnosis?

See page 499

PUTZ-YAEGER SYNDROME

This syndrome is characterized by polyposis of the mucosa of the small intestine and unusual skin and mucosa pigmentation. The disorder is familial in fifty percent of the cases inherited as a simple mendelian dominant. It occurs in all age groups and in both sexes.

The clinical manifestations consist of colicky abdominal pain, gastro-intestinal bleeding and, in some instances, episodes of invagination with intestinal obstruction, especially in children.

The areas of cutaneous pigmentation consist of dark brown melanin deposits appearing at one to five millimeter round, oval or stippled areas on the lips, the skin of the face and digits, the nasal area, around the eyes and mouth and occasionally on the genital or rectal mucosa.

The polyps are demonstrated roentgenologically, most commonly located in the small intestine but can also be found in the stomach, large intestine, and rectum. Low grade malignant degeneration has been found to occur in twenty percent of reported cases.

Resection of the involved area of intestine is indicated as a prophylactic measure and becomes imperative when severe bleeding or obstruction develop.

Some Facets of Adenomyosis and Endometriosis

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ADENOMYOSIS and endometriosis are similar conditions in which aberrant endometrium-like tissue is found outside the uterine cavity. Although these terms are occasionally used synonymously, adenomyosis usually indicates that condition in which endometrial glands are found deep within the uterine musculature, beneath the mucous surface and without communication with the uterine cavity, possibly resulting in some enlargement and asymmetry of the uterus.

Among the many contributions made by Cullen[1] to gynecology is his description of adenomyosis uteri. He demonstrated that most of these lesions are due to an extension of endometrium into the uterine musculature or myometrium. Cullen will probably forever be remembered by the sign which bears his name — the blue umbilicus associated with intraperitoneal hemorrhage.

Endometriosis is that condition in which endometrium, or endometrium-like tissue, occurs in other pelvic organs and occasionally in tissues outside the pelvis. The lesions of both adenomyosis and endometriosis are under the physiologic control of the ovaries and ablation of the ovaries abolishes the activity of the process.

The ovaries, the uterine ligaments, the pelvic peritoneum, the recto-vaginal septum, fallopian tubes, laparotomy scars, hernial sacs, and umbilicus, cervix and appendix are areas most frequently involved in endometriosis. The sites of involvement in 52 patients with endometriosis are shown in Table IV. The puckered appearance with tiny brown cysts is characteristic. In extensive lesions induration and adhesions may be pronounced. At operation, when the ovaries are freed from the posterior surface of the broad ligament or from other structures to which they have become adherent, there is a gush of chocolate syrupy fluid, a near-positive sign of endometriosis.

Although Russell reported the first authentic case of endometriosis of the ovary in 1899, it was not until Sampson[2] began to write on these lesions in 1920 that the true nature and frequency were appreciated by the medical profession. Now, only forty years later, it is recognized as one of the commonest pathological conditions of the fe-

Table I

Incidence of Endometriosis

Gynecologic Cases	198
Endometriosis	52 (26.26%)
Total Consecutive	

Table II

Ages of Patients with Endometriosis

Age Group	No. Patients
18 yr.	1
21-30 yr.	6
31-40 yr.	16
41-40 yr.	20
Above 50 yr.	9
	—
Total	52

Average age of 9 patients with adenomyosis uteri: 46 yrs.

Table III

Sterility and Fertility in patients with endometriosis

No children	14 patients
One child	7 patients
Two children	14 patients
Three children	8 patients
Four children	2 patients
Six children	1 patient
Eleven children	1 patient
Not stated	5 patients

Average number of children 1.9.

Table IV

Pathology—Organs involved in 52 patients with endometriosis

Uterus	18
One ovary	23
Both ovaries	17
Fallopian tubes	4
Pelvic peritoneum	5
Umbilicus	1
Appendix	1
Sigmoid	1
Adenomyosis uteri	9

Table V

Types of Operation — 52 Patients

Conservative — Excision, destruction of small areas, uterine suspension	12
Radical — abdominal or vaginal hysterectomy plus excision of involved organs or areas	40

male pelvis and nearly every physician considers it in differential diagnosis. Sampson reported an incidence of 98 cases in 332 patients; more recently Meigs[3] has drawn attention to the low incidence (4.2-5.7%) in ward patients and to an incidence of 23.8-30.5% in private patients.

In a three-year period 198 gynecologic patients were cared for by the author in a general surgical practice. In each patient the pelvis was explored. Table I shows the incidence of endometriosis. There were 52 cases of endometriosis and adenomyosis, an incidence of 26.26%.

The etiology of endometriosis has been debated for many years. Novak[4] suggests that there is probably more than one method of origin. Abnormal differentiation in the celomic epithelium may produce endometrial epithelium. Sampson believed that during menstruation particles of endometrium might pass through the fallopian tubes into the peritoneal cavity and be implanted on the ovaries or elsewhere. TeLinde and Scott[5], using monkeys, demonstrated that Sampson's theory is correct. Meigs believes that the issue is a closed one, the endometriosis is caused by reflux of endometrial tissue through the tubes, and that the celomic theory may be possible but has not been proved.

This is a condition found more commonly in young women. The ages of the patients with endometriosis included in this study are shown in Table II. The youngest patient was eighteen years of age; the oldest, 75 years. The average age of the nine patients with adenomyosis uteri was 46 years.

Endometriosis and adenomyosis are associated with sterility or low fertility. As shown in Table III, fourteen of these fifty-two patients had not been able to have children, seven patients had one child each, and each of fourteen patients had two children.

Pain is the most common symptom. In the early stages the pain is present during the menstrual period; later the patient has pre- and postmenstrual pain also, with frequent backache. Bloating is a common complaint also and some patients volunteer that girdles and constricting garments cannot be worn. In some persons the disease is nearly incapacitating. As in other diseases, the extent of the pathologic process does not always coincide with the disability of the patient. Conversely, extensive disease can be present without symptoms.

Fever can be associated with endometriosis and secondary infection which may be disguised as pelvic inflammatory disease. The following case is illustrative: The wife of an Army officer, age 46, never pregnant, was in a government hospital in 1957, acutely ill with a huge pelvic abscess which was said to extend to the umbilicus and which was drained through the vagina. In 1958 a perianal abscess was drained. In 1959 there were cystic masses in the pelvis for which radical operation was done. Pathology report: Adenomyosis of the uterus, endometriosis of both tubes and ovaries, cystic cervicitis.

In a study of 1,109 patients with acute conditions in the lower abdomen made by Neel[6] in 1957, it was found that 99 patients had acute gynecologic conditions, five of which were caused by endometriosis. The contents of an endometrial cyst are very irritating to the peritoneum. The perforation of a cyst, therefore, may produce a painful and tender abdomen. The loss of blood from a ruptured cyst may also be voluminous.

Mrs. M. F., age 25, nulliparous, gave a history of pelvic distress of one year's duration. On the evening of admission to the hospital she had a sudden onset of severe lower abdominal pain. She was extremely tender in the lower abdomen and on pelvic examination. At operation the peritoneal cavity was found to be filled with blood. There was a large endometrial cyst of the right ovary, a smaller cyst on the left ovary, and endometriosis of the sigmoid. Operation consisted of right salpingo-oophorectomy, partial resection of the left ovary, destruction of lesions of the sigmoid, uterine suspension and appendectomy. Two pregnancies have ensued.

Conservatism is the key work in the treatment of endometriosis in young persons in whom it is desirable to preserve the child-bearing function and to overcome sterility. The operative procedure consists of excision of the larger areas of endometriosis, possibly the destruction of smaller lesions, and uterine suspension. In older patients the primary objective is eradication of the disease process, so more radical procedures are warranted, and these are sometimes necessary in young patients in whom the involvement is extensive. As shown in Table V, in these fifty-two patients conservative treatment was possible in only twelve. In the remaining forty patients (76.9%) radical surgical treatment was necessary.

Miss E. J., age 21, a student nurse, was admitted to the hospital on December 1, 1941. She had always had dysmenorrhea which was increasing in severity. She spent the first day of each period in bed. There were frequent attacks of low abdominal pain and there had been several hospital admissions. The patient had been bleeding irregularly for several weeks. At operation endometriosis of both ovaries was found; there was a large endometrial cyst of the right ovary and the fundus of the uterus was adherent in the cul-de-sac. Opertion consisted of D & C, right oophorectomy, partial resection of the left ovary, uterine suspension. The patient has married and had two children when last heard from.

Summary

1. Endometriosis was found in 26.26% of patients who had major gynecologic operations.
2. More than one-fourth of these patients were childless. Average number of children was 1.9.
3. Endometriosis may masquerade as pelvic inflammatory disease and may produce an "acute lower abdomen."
4. Conservative treatment of endometriosis in the young is highly desirable and may be rewarding in the correction of sterility.
5. In older patients and in those with extensive disease more radical operations are indicated.

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Harris' Syndrome

(Functional hypoglycemic syndrome—organic hyperinsulinism)

This syndrome is characterized by a low blood sugar, weakness, hunger, a sense of jitterness, mild mental confusion, or even erratic behavior, with a compensatory hyperadrenalism associated with tachycardia and flushing. It occurs most frequently in adults and is sometimes familial. Organic hyperinsulinism is caused by hyperplasia of the islands of langerhans or by an insulinoma. Ten percent of these may become malignant. Collapse, coma, or convulsions may occur. Prolonged recurrent hyperinsulinism produces irreversible degenerative cerebral changes.

Nervous manifestations, a fasting blood sugar below 50 milligrams percent and relief of symptoms by intravenous glucose may warrant surgical exploration for a pancreatic tumor. If a tumor is not found, considerable portion of the body and tail of the pancreas should be removed. The removal of an excessive amount of pancreatic tissue may result in steatorrhea.

A Frenchman must be always talking, whether he knows anything of the matter or not; an Englishman is content to say nothing, when he has nothing to say.—*Samuel Johnson*

Where two discourse, if the one's anger rise, the man who lets the contest fall is wise.—*Euripides*

A Quarter Century of the Minnesota Obstetrical and Gynecological Society

The president of the Minnesota Obstetrical and Gynecological Society reviews the vicissitudes of the first 25 years of this society.

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AT THE CLOSE of this meeting, the Minnesota Obstetrical and Gynecological Society will celebrate its Silver Anniversary. Throughout its 25 years of existence, it constantly has fulfilled its object, namely the stimulation and improvement of the practice of obstetrics and gynecology and the promotion of maternal welfare in Minnesota. We all should be proud to be members of this organization, which has grown and prospered under the watchful eyes of our peers. The society undoubtedly was conceived in the minds of many practicing obstetricians in Minnesota, but it possibly achieved its birthday when Dr. Robert Mussey was appointed chairman of the Maternal Welfare Committee of the Minnesota State Medical Association. At this time, according to one of the early presidents, it was suggested that a state organization limiting its program and activities to obstetrics and gynecology might enhance the interest in this field.

First Stirrings

A preliminary meeting was held on February 21, 1936, at the Town and Country Club in St. Paul. Drs. Condit, LaVake, Wynn, Ehrenberg, Swanson, Lang and Leland represented Minneapolis, while St. Paul was represented by Drs. Barry, Schulze, Rothrock, Swendson and Hartley. Drs. Coventry and Moe came from Duluth, and Dr. Froats from Thief River Falls, while Drs. Mussey, Randall and Counseller represented Rochester. Dr. LaVake made the motion to organize such a society, and his motion

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*Read at the meeting of the Minnesota Obstetrical and Gynecological Society, Minneapolis, Minnesota, November 19, 1960.
From the Mayo Clinic and Mayo Foundation, Rochester, Minn.

was carried unanimously. One of the interesting discussions at this meeting pertained to the credentials of applicants. At that time, we are told, the American College of Surgeons was not the venerable old man that it is today. Admission to the College was relatively easy, and a number of men had become College members merely by designating themselves as obstetricians when they actually were general practitioners with a special interest in surgery. Thus, it was decided that only diplomates of the American Board of Obstetrics and Gynecology, or members of the American Gynecological Society or the American Association of Obstetricians, Gynecologists and Abdominal Surgeons would be eligible for membership in the Minnesota Obstetrical and Gynecological Society.

A Constitution is Born

In May, 1936, at a luncheon meeting in Rochester, a constitution was adopted and Dr. Robert Mussey was elected the first president, Dr. James Swenson vice-president, and Dr. Everett Hartley, secretary-treasurer. Dr. John Moore, of Grand Forks, became the first associate member of the society. The first scientific meeting of the society was held on January 16, 1937, in the rooms of the Hennepin County Medical Society. The first scientific paper to appear on a program of the society was given at that time by Dr. Owen Robbins, of Minneapolis, his title being "A Modification of Thoms' X-ray Pelvimetry." Following an excellent scientific program, members and guests assembled at the Minneapolis Athletic Club for a social hour and dinner.

On April 17, 1937, the society met at Rochester, and Dr. J. C. Litzenberg was elected the second president. Even at that time, the treasurer found it necessary to call attention to the fact that membership dues would have to be paid promptly if the society were to continue.

A Baby is Born

Duluth played host to the society for the first time on September 11, 1937. This was probably the best-attended meeting in its history, when approximately 200 members and guests attended a showing of the sound movie entitled "The Birth of a Baby," which had been edited and prepared by Dr. Fred Adair. Most of the scientific program was taken up by discussion of the Watkins-Wertheim interposition operation. Drs. J. C. Masson and Litzenberg debated the merits of this particular approach. Dean Good presented an after-dinner talk on "Awaiting the Master." The speaker eloquently described seven basic virtues as they appeared in the physiognomy of seven handsome dogs painted by a famous portrayer of animals. Dean Good thought that these virtues also have a place in the lives of men.

The second annual meeting of the society was held on April 23, 1938, in St. Paul. The scientific papers included a brief review of choriocarcinoma with a case report by Dr. Charles Froats. Following a paper by Dr. John Rothrock on extraperitoneal cesarean section, a prolonged discussion took place relative to its merits. Dr. Rothrock noted that from 1800 to 1880 the mortality rate for cesarean sections had remained between 60 and 80 per cent. He described his technic of extraperitoneal cesarean section and reported a series of 96 cesarean sections, of which 46 were extraperitoneal. Dr. Rothrock was elected the third president of the society.

Several of Many Giants Appear

The third annual meeting was held on April 29, 1939. Dr. John McKelvey appeared on the program for the first time and gave a paper entitled "Osteomalacia." The methods of study at the Peking Medical College under Dr. McKelvey were outlined. The next meeting was held on January 13, 1940, at Rochester, under the presidency of Dr. W. A. Coventry. The hormones and their significance in gynecology were discussed by Dr. Della Drips; there was no discussion of this paper, probably, as Dr. Coventry suggested, because none of the members knew much about hormones. Dr. Malcolm Dockerty appeared on the program for the first time that year and discussed solid ovarian tumors, especially those having endocrinologic potentialities.

The fourth annual meeting was held on April 13, 1940, in St. Paul. Dr. Lawrence Randall, chairman of the Program Committee, suggested that new members be required to present a paper or discussion before the society within a year after their election, and that such members be required to appear before the society at least once every 3 years so that they might become better known. Dr. Masson was elected the fifth president. Dr. Coventry gave a presidential address entitled "Sixty-Eight Years, Then What?" He based his talk on a number of old Minnesota medical journals, which included discussions on the repair of rectocele by Dr. William Worrall Mayo.

Dr. Masson called the next meeting to order in Duluth, on December 14, 1940. The scientific program mainly was concerned with a broad discussion of various hormones that had been suggested for use during pregnancy and in gynecology. One speaker stated that the time was not opportune for placing stilbestrol on the market because of its remote effects.

A Storm and 17 Discarded Dinners

The meeting of May 28, 1941, held at the Alverdes Cafe in St. Paul, was significant in two respects. First, a spring meeting had not been held that year and, secondly, the meeting was to consist of a business agenda only. A severe thunderstorm occurred that evening, and only eight men were present. The misfortune was complicated further by the fact that dinners for 25 had been ordered. Dr. Everett Hartley acted as chairman of the meeting and proceeded with an election in which Dr. Roy Swanson was chosen the sixth president.

Dr. Swanson had the longest tenure of office as president, for another meeting was not held again until December 11, 1943, at which time it was voted to legalize the unconstitutional action taken at the previous meeting, when the officers were elected without a quorum being present. The society was instructed to pay for the 17 dinners not eaten at the time of the meeting. Following the election of Dr. Claude Ehrenberg as the seventh president, a lively discussion took place relative to changing the constitution. It was the almost unanimous opinion that membership need not be limited to trained obstetricians with the requirements previously noted; the most important factor was that the members be interested in obstetrics and gynecology and be willing to listen to and discuss these subjects.

Why Not Keep the Old Ones?

The Fall meeting was held in Rochester on October 23, 1944, when the society was the guest of the Minnesota Society of Internal Medicine. In an unprecedented move, the president and vice-president were re-elected to a second term. Dr. Russell Moe was elected as the second secretary of the society. The Spring meeting in 1945 was held at the Radisson Hotel, with 84 members and guests in attendance. Dr. Louis Diamond, of Boston, discussed the Rh factor, and Dr. Richard Te Linde, of Johns Hopkins, discussed preinvasive carcinoma and uterine prolapse. Mr. Franklin Petri, of Minneapolis, spoke on "Alcoholics Anonymous — by One of Them."

The next meeting was held on December 15, 1945, at the St. Paul Hotel, with Dr. Ehrenberg presiding. Dr. Moe was elected delegate and Dr. Hartley alternate to the National Federation of Obstetrics and Gynecology, which was the forerunner of the American College of Obstetrics and Gynecology. Dr. Lawrence Randall was elected the eighth president. He assumed his office at the next meeting, held on May 4, 1946. At this latter meeting, Dr. John Brewer presented an informative and interesting discussion on uterine carcinoma. Dr. Harold Deutsch, Professor of History at the University of Minnesota, held the audience spellbound by his discussion on "The Interrogation of Nazi Generals."

Superman and Caesar

A total of 42 members and guests attended the Spring meeting on May 24, 1947. The guest speaker was the late Dr. Herbert Schmitz, of Chicago, who presented an interesting and instructive discussion on "Adequate Therapy for Carcinoma of the Cervix." Perhaps illustrative of the times was the fact that the members enjoyed an entertaining discussion of "Superman," by Dr. F. J. Hirschboeck, of Duluth.

St. Paul acted as host to the Fall meeting on November 7, 1947. A symposium was held on cesarean section. Dr. Arthur Hunt reported his experiences with cesarean section at the Mayo Clinic, and Dr. Ehrenberg summarized the results of a survey of cesarean section in Minneapolis in 1946. Dr. Samuel Cosgrove, of the Margaret Hague Maternity Hospital, Jersey City, New Jersey, discussed the symposium. He lamented the fact that the Mayo Clinic had not utilized extraperitoneal cesarean section more frequently. The extraperitoneal approach had just been revived by Drs. Waters and Norton, of the Margaret Hague Maternity Hospital, as a modification of the original Latzko extraperitoneal cesarean section. After an informal banquet, Dr. Benjamin Spock spoke on the interesting subject of "The Middle-Aged Child." The annual dues were increased from $5 to $8 because of insufficient funds to meet the obligations of the society. Dr. Litzenberg was unanimously elected to honorary membership. He died less than a year later. Dr. Hartley, the first secretary, was elected the ninth president.

The Spring meeting was held in Rochester, on May 1, 1948. The president could not attend, and the chair was occupied by the vice-president, Dr. Moe, who had assumed this position following the death of vice-president Dr. James Manley. Dr. John Haugen was elected as the third secretary of the society. The membership consisted of 76 active members, seven associate members and two honorary members.

The Litzenberg Fund

Minneapolis acted as host to the Fall meeting on October 9, 1948. This was held in conjunction with the obstetrical and gynecological societies of Iowa, Wisconsin and North Dakota. Dr. M. Edward Davis, of Chicago, the guest speaker, discussed steroid therapy in the complications of pregnancy. Dr. Randall broached the possibility of a memorial to the late Dr. Jennings Litzenberg, noting that several other societies, including the American Gynecological Society, the American Association of Obstetricians and Gynecologists and the Central Association of Obstetricians and Gynecologists, wished to participate in such a memorial. Dr. Randall was appointed chairman of a committee to study this question further. Dr. Frederick Loomis, of Piedmont, California, an obstetrician and gynecologist, world traveler and author of the books "The Consultation Room" and "Enjoy Yourself, It's Later Than You Think," was the after-dinner speaker. He delighted the audience with his witticisms and deeply moved all those present with his philosophies, inspiring the listeners as he related many of the events of his full life.

The Spring meeting was held in the Founders' Room of the Duluth Clinic on May 28, 1949. The guest speaker, Dr. Ralph Reis, presented his philosophy on "Diabetes in Pregnancy." The question of the Minnesota Medical Foundation was raised by Dr. Ehrenberg. Most of the members thought that the society should contribute to the fund administered by this body, since it was to be in honor of Dr. Litzenberg. This was to be used as a traveling fund to permit one who had completed the required graduate training in obstetrics and gynecology in the University of Minnesota Medical School to spend at least an additional year of study in an outstanding obstetric or gynecologic center. It was voted that the active members of the society contribute to this fund $5 a year for the next 10 years.

The Fall meeting was held in St. Paul on December 2, 1949, with Dr. Moe as the tenth president. Dr. Ehrenberg gave a preliminary report on the establishment of a national registry in gynecologic pathology. This registry was stimulated largely through the wishes of Dr. Robert Meyer, whose death had occurred in December, 1947.

A Journal is Adopted

Rochester was the site of the Spring meeting on April 29, 1950, with Dr. James Swendson as president. The members were notified that the *American Journal of Obstetrics and Gynecology* had granted their request that this journal be designated as the official organ of the society.

The Fall meeting in 1950 was held at Minneapolis under the leadership of Dr. Swendson. Dr. Ehrenberg, acting as delegate to the Federation of Obstetrics and Gynecology, reported on the present status of the Federation. After remarks by Drs. Ehrenberg, Mussey and Moore, the society voted to go on record as favoring the formation of the American Academy of Obstetrics and Gynecology. Dr. Moe reported on the status of the Litzenberg Fund in the Minnesota Medical Foundation. Three members were appointed to represent the Minnesota Obstetrical and Gynecological Society in activating the Litzenberg Fund.

The Spring meeting was held on May 26, 1951, at St. Luke's Hospital, Duluth. Dr. William Mercil, of Crookston, was the president. Dr. J. H. Randall, of the University of Iowa, presented a paper on "The Management of Persistent Occiput Posterior." Dr. Coventry was unanimously elected a lifetime honorary member of the society.

An Academy is Born

A meeting on December 1, 1951, was held at the St. Paul Hotel. Dr. Hunt reported on the meetings of the American Committee on Maternal Welfare and the National Federation of Obstetric and Gynecologic Societies, which had been held in Atlantic City in June, 1951. These two organizations had voted to merge, thereby creating a body to be called "The American Academy of Obstetrics and Gynecology." Dr. Ehrenberg reported that it would not be possible for the Litzenberg Fund to finance a travel fellowship, as originally had been proposed. As an alternate, it was suggested that a Litzenberg Room be created in the new Mayo Memorial Building. The scientific portion of this meeting was held with the societies of obstetrics and gynecology representing North Dakota, Wisconsin and Iowa. Dr. Vernon Smith, of St. Paul, entertained after dinner by presenting a film on outdoor life. There was a total of 177 registrants for this combined meeting. Dr. Rodney Sturley acted as secretary-treasurer at this time.

The Spring meeting was held in Rochester on May 3, 1952. The thirteenth president was Dr. John Haugen. Dr. Moe explained the impractical nature of the Litzenberg Fund and suggested that the society recommend that it be used to decorate a Litzenberg Memorial Room in the Mayo Memorial Building. This was approved.

Approximately 70 members were present at the Fall meeting held on December 6, 1952, in Minneapolis. The death of Dr. Moe was noted. Dr. Hunt was elected the fourteenth president. Dr. William Mengert, of the Southwestern Medical School, University of Texas, Dallas, acted as guest speaker. Following the usual dinner and cocktail hour, Mr. William Vaughan, a columnist on the Kansas City Star, spoke on the subject of the medical profession and its public relations.

The next meeting was held on April 25, 1953, in Duluth, with Dr. Hunt as president. There were 37 members present. The guest speaker, Dr. Charles McLennan, of San Francisco, discussed uterine bleeding. The dues were increased to $15. The president suggested the possibility of establishing rules governing attendance. However, the society did not make specific recommendations at this time.

The Importance of Being Firm

The Fall meeting in 1953 was held on December 5, at the Lowry Hotel, St. Paul. The guest speaker, the late Dr. Leroy Calkins, of Kansis City, spoke on "The Importance of the Firm Cervix in Prolonged Labor." Dr. Arnold Swenson was elected the fifteenth president.

The Spring meeting was held on April 24, 1954, at the Mayo Foundation House, Rochester, with the vice-president, Dr. Leonard Lang, officiating. It was voted that the section in the constitution concerning honorary members would be as follows: Honorary membership would be offered to all active members who have retired from active practice but wish to maintain their association with the society; all members having attained the age of 70 years would be classified automatically as honorary members. Such members would retain all privileges of the society and would not be required to pay dues. Dr. Roy Holly, Associate Professor of Obstetrics and Gynecology, University of Minnesota Medical School, presented his work on hypoplastic anemia in pregnancy.

Minneapolis acted as host to the Fall meeting on December 4, 1954, Dr. Swenson presiding. The total membership of the society was then 109 active members, 11 associate and six honorary members. The Litzenberg Fund again was discussed, and a committee of three was asked to cooperate with the Department of Obstetrics and Gynecology at the University of Minnesota in the development of a Litzenberg Library. Dr. Leonard Lang was elected president of the society, with Dr. Edward Banner as fifth secretary-treasurer of the organization. Dr. Curtis Lund, of the University of Rochester School of Medicine, Rochester, New York, was the guest speaker. His subject was "Smear, Biopsy, Ring or Cone?" Dr. Ralph Reis, editor of *Obstetrics and Gynecology,* the official journal of the American Academy of Obstetrics and Gynecology, was the after-dinner speaker. A total of 134 members, guests and wives attended the banquet.

The Spring meeting was held on April 30, 1955, in Duluth, with Dr. Lang presiding. There were 48 members and 23 guests in attendance. The society then had 115 active members, 11 associate and nine honorary members, with two active members in military service. After the scientific program, libations and dinner were held at the Kitchi Gammi Club.

The Litzenberg Fund Again

St. Paul played host to the Fall meeting on December 3, 1955, with Dr. Lang presiding. Dr. John McElvey outlined the present state of the Litzenberg Fund and suggested that the room adjacent to the obstetrical unit be used for a library to be called the "Litzenberg Memorial Library." The report of the Maternal Mortality Committee was given by Dr. Titus Bellville. This report was discussed by the guest speaker, Dr. Edward Hughes, of Syracuse, New York, and also by Drs. Swenson, McKelvey and Randall. The scientific session was concluded with a talk by Dr. Hughes on "Fetal Salvage."

A Regional Session

The Spring meeting was held in Minneapolis on April 13 and 14, 1956. The scientific portion of the program was held in conjunction with District VI of the American College of Obstetrics and Gynecology. All state societies within District VI were represented except that from Illinois. The meeting was called to order by the seventeenth president, Dr. Rodney Sturley.

The Fall meeting was held in Mann Hall, Rochester, on September 22, 1956. It was noted that Drs. Condit and Hartley had passed away during the interim. An invitation from the American College of Obstetrics and Gynecology to hold a yearly combined meeting with them within the territorial limits of District VI was read to the society. It was decided that such a yearly combined meeting was not in the best interest of this group. However, it was suggested that an occasional joint meeting within the district would be welcome. The scientific session was concluded by an address by Dr. S. R. M. Reynolds, Professor of Anatomy, University of Illinois. The title of his paper was "The Pulmonary Circulation at Birth." Following dinner, Lt. Col. J. P. Stapp, of the Holloman Air Development Center, gave an address entitled "Crash Survival Research, Automotive and Aeronautical." Dr. Frederick Schade, of Worthington, was elected president.

The next meeting was held on April 27, 1957, in Duluth. After an interesting and informative scientific session, Dr. George Schaefer, of Forest Hills, New York, spoke on "Female Genital Tuberculosis."

The Fall meeting on November 30, 1957, was held at the Town and Country Club, St. Paul, Minnesota. The secretary reported on the additional growth of the society, stating that the active membership now had reached 135, with 14 associate and 10 honorary members. Dr. Donald Freeman gave the maternal mortality report and Dr. Rosenfield discussed it. The scientific sessions were concluded by a paper given by Dr. Ben Peckham, of the University of Wisconsin, on "The Diagnosis and Management of Preinvasive Carcinoma of the Cervix in the Pregnant and Nonpregnant Patient." Dr. Vernon Smith, of St. Paul, presented an interesting movie entitled "From the Cree to the Cajuns." Dr. McKelvey was elected the eighteenth president.

The Spring meeting was held on May 3, 1958, in Mann Hall, Rochester, with Dr. McKelvey presiding. The death of the society's first president, Dr. Robert Mussey, on April 20, 1958, was noted; the society rose in silent tribute to his memory. The increasing difficulties encountered in programing were discussed by several members. Various methods were suggested to lighten the task of the secretary and also to ensure a broader base of participation. Dr. Nicholas S. Assali, of Los Angeles, concluded the scientific sessions by a talk entitled "New Horizons in the Experimental Induction of Toxemia."

The Litzenberg Fund Once More

The Fall meeting was held in the Mayo Memorial Building on November 29, 1958. President McKelvey presented a detailed report on the Litzenberg Fund. He reiterated that the original intention and obligations of the society would cease in December, 1958, and that funds accumulated had not been utilized for the purpose for which they were collected. It was the desire of the committee that he represented to put this money into immediate use to perpetuate the name of Dr. Litzenberg. The society voted that monies collected by the Minnesota Medical Foundation and stipulated for the Litzenberg Fund be used for basic laboratory material therein to be called the "Litzenberg Experimental Laboratory," and that some time in the future, should additional funds be derived for a similar purpose, such monies should be used for a reading room or library as previously planned, incorporated about the portrait of our beloved deceased member. Dr. Eugene Kasper was elected the nineteenth president and Dr. Alex Barno secretary-treasurer of the society. Dr. Haugen reported on the recent meeting in Minneapolis of the Central Association of Obstetricians and Gynecologists. It was noted that the Local Arrangements Committee, with its sponsoring agencies, the Minnesota Obstetrical and Gynecological Society and the Minneapolis Obstetrical Society, had sustained a deficit of $214. This deficit was assumed by the Minnesota Obstetrical and Gynecological Society. The scientific portion of the program was concluded by Dr. H. B. Atlee, of Halifax, Nova Scotia. The title of his paper was "Experiences With Various Methods of Stress Incontinence."

The Spring meeting was held on April 25, 1959, at St. Luke's Hospital, in Duluth. The society endorsed regional meetings of the American College of Obstetricians and Gynecologists but stated that such regional meetings would not be a substitute for any of the society meetings and that there be no financial support by this society. Dr. Roy Hertz, of Bethesda, Maryland, gave a paper on "Chemotherapy of Choriocarcinoma and Related Trophoblastic Tumors."

The next meeting was held on November 7, 1959, at the Lowry Hotel in St. Paul. Dr. Banner was elected the twentieth president. A pamphlet proposed by the Minnesota Maternal Mortality Committee entitled "Suggested Guide for Obstetric Hospital Practice" was discussed at length. The society approved the idea as a suggested guide. The scientific portion of the program was concluded by Dr. Harvey Carey, of Auckland, New Zealand, speaking on "Staphylococcus Cross Infection in Maternity Units."

Program Problems

The Spring meeting was held on May 7, 1960, in Rochester. The deaths of Drs. Walter Baer and James McCabe, of St. Paul, were announced. The current roster consisted of 139 active members, 16 associate and 14 honorary members. The perpetual problems of the Program Committee were discussed. The lack of members volunteering for presentation of scientific papers was emphasized. Drs. McKelvey and Randall discussed membership obligation in this regard; it was the general consensus that each member should feel obligated to present a scientific paper at certain intervals. A five-man Program Committee was appointed by the president. Dr. Richard Fliehr discussed the problem of the Minnesota State Medical Association's Committee on Medical Service with regard to the adoption of a relative-value fee schedule. Dr. Fliehr was to contact each specialty group in the state for suggestions relative to such a fee schedule. The scientific session was concluded by Dr. James H. Ferguson, Chief of the Department of Obstetrics and Gynecology, University of Miami Medical School. The title of his paper was "Correlation of Histopathologic and Cytologic Changes in Cervical Cancer." This meeting was concluded with a cocktail-buffet party held at the Rochester Golf and Country Club. There were no after-dinner speeches.

L'Envoi

Thus has terminated the first quarter century of the Minnesota Obstetrical and Gynecological Society. It behooves every organization periodically to cast a retrospective glance at its ovulation, fertilization, implantation, intra-uterine development, and parturition, succeeded by its neonatal, childhood, prepuberal, puberal and postpuberal growth. This society appears to have attained the full flush of young and vigorous adulthood.

This review of its ontogeny was thought worth while to give the younger generation some idea of the early life of the society and to awaken pleasant memories of past achievements for the more mature members. We anticipate the future, confident that the heritage of the past will be safeguarded and nurtured by those who will be responsible for the long and hardy adult life of this organization.

False words are not only evil in themselves, but they infect the soul with evil.—*Socrates*

The Minnesota Professional Corporation Act

• Background
• Advantages
• Provisions
• Problems

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On May 8, 1961, the Governor signed Chapter 1 of the Special Session of the 1961 Minnesota Legislature known as the "Professional Corporation Act." **The Act permits three or more physicians licensed to practice in this state to incorporate and to obtain from the Minnesota State Board of Medical Examiners a certificate of registration authorizing the corporation to provide to the public medical services and services ancillary thereto.** The Act was sponsored before the Legislature by the Minnesota State Medical Association in an attempt to obtain for Minnesota physicians many income tax benefits that are available to businessmen who are employed by corporations.

This article will outline the background leading up to the sponsoring of the Act by the Minnesota State Medical Association, the tax advantages available to those physicians who take advantage of the Act, the provisions of the Act, and some of the problems that are likely to arise under the Act.

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Background

As the group practice of medicine has become more and more common in the United States over the past 30 to 40 years, more and more groups have become dissatisfied with the traditional form of group organization—the partnership. Probably the principal reason for such dissatisfaction was the problem of acclimating partners to think in terms of centralized management and continuity of life which are essential if a group is to become a permanent fixture in the community it serves. It is perfectly possible to draft a partnership agreement which will have both such characteristics, but unless the partners become accustomed to think in terms of the welfare of the group as a whole, a partnership agreement, no matter how carefully drafted, is not likely to produce a permanent group organization. In an attempt to find a legal form of organization under which members might be more inclined to think of the welfare of the group as a whole, several groups in the 1930's began to organize or reorganize as unincorporated associations or as business trusts.

The attitude of the Internal Revenue Service toward such organizations in those days was quite different from what it is today. The Internal Revenue Code then provided, as it does today, that the federal corporate income tax is imposed not only on corporations but also on organizations which have corporate characteristics such as "unincorporated associations." Under this provision the Internal Revenue Service started attacking medical groups organized as unincoporated associations and business trusts on the theory that they should be taxed as corporations. In 1936 the service won its first case which involved Dr. Pelton of Elgin, Illinois, and in which the court held that the Pelton Clinic should be taxed as a corporation.

When federal income taxes were not reduced to any substantial extent following World War II, medical groups, along with other professional men, began to look for means to reduce the burden of income taxes. One answer seemed to be in employee retirement plans first recognized for federal tax purposes in the Internal Revenue Code of 1942. However, groups organized as partnerships could not provide tax relief for their partners by adopting such a plan because the law and the regulations both provided that such a plan would not qualify for favored tax treatment if it covered partners. Moreover, the laws of most states did not permit groups to incorporate for the practice of medicine. The most hopeful route appeared to be reorganization as an unincorporated association, one of which in Dr. Pelton's case had just recently been held to be taxable as a corporation for federal income tax purposes. Several groups proceeded so to reorganize and to adopt employee retirement plans covering not only employees but also physicians who had formerly been partners.

At this point the Internal Revenue Service, fearing a substantial loss of tax revenue, took a new look at the problem and after some soul searching decided to reverse its position. Its new position was that unincorporated associations were not corporations but rather partnerships and, therefore, could not adopt qualified retirement plans covering associates who, in the Service's opinion, were no more than partners. This was the position the Service tried to establish in the now famous case involving Dr. Kintner of Missoula, Montana. The case, decided in 1954 by the Ninth Circuit Court of Appeals, was a complete defeat for the Service. Nevertheless, shortly thereafter the Service issued a bulletin which stated that the Kintner case "will not be accepted by the Internal Revenue Service as a precedent in the disposition of other cases involving similar fact situations." There the matter seemed to rest until the Service on October 10, 1957, tantalizingly issued a new ruling "modifying" its prior position and concluding with the following ray of hope: "Basic criteria to be used in testing the existence of an association taxable as a corporation will be stated in a Revenue Ruling to be published at a later date." For more than two years the medical profession waited for the promised ruling but nothing was forthcoming.

Then late in December, 1959, proposed regulations were issued. To some these proposed regulations seemed helpful. But many students of the subject were disturbed by a provision in the proposed regulations to the effect that state law would be followed in determining whether an association meets the tests of an organization which is eligible to be taxed as a corporation. It was feared that associations might be considered partnerships under state law and that if they were, associations subject to the laws of states which had adopted the Uniform Partnership Act clearly could not meet the tests. Nearly 2/3rds of the states have adopted the Uniform Partnership Act and Minnesota is one which has done so. These fears were pointed out to government officials at a public hearing in Washington in February 1960. There followed another long wait for final action by the Internal Revenue Service.

The final regulations were issued on November 15, 1960, just a little over six years after the Kintner case was decided. The final regulations justified all the fears that had been expressed by many students of the problem for they specifically stated that an association subject to the Uniform Partnership Act could not meet most of the tests that must be met if an organization is to be taxed as a corporation. However, they clearly pointed the way that a solution to the problem could be found. They provided that state law is to be examined to determine whether the tests for taxability as a corporation have been met. State law can be changed by the state legislature. Therefore, the Minnesota Legislature was asked to pass an act which would permit the incorporation of medical groups and which would provide that any medical group so incorporated would meet the tests laid down in the final regulations for taxability as a corporation.

The Minnesota Legislature passed the Act as Chapter 1 of the Special Session. Minnesota is one of 14 states that so far in 1961 have passed laws similar to the Minnesota Professional Corporation Act designed to give tax relief to physicians and other professional groups. Connecticut had passed a similar act in 1951.

The Internal Revenue Service has so far issued one ruling involving a medical group organized under one of these Acts—the Connecticut Act. The ruling involves the Colony Medical Group, Incorporated, of Meriden, Connecticut, and holds that it is taxable as a corporation.

Advantages

The Professional Corporation Act provides a vehicle by which medical groups can organize in order to provide centralized management and to perpetuate the group. These advantages should not be minimized. However, as most of the publicity and discussion with respect to the Act has been directed toward the tax advantages which it affords, a short discussion of these seems appropriate.

Most of the publicity with respect to tax advantages has dealt with so-called qualified retirement plans. These are, of course, important but they are not the only advantages. Among the other tax advantages, all of which are available to employees of corporations, are the following:

* * *

1. Insurance programs providing group life insurance, group accident and disability insurance, or group health insurance can be established for all employees of a professional corporation, including those who were partners in a predecessor partnership. Premiums paid for such insurance will be deductible when computing the professional corporation's federal income taxes and will not be taxable income to the employees of the professional corporation.

2. A program can be established providing for payments to employees of the professional corporation who become sick or disabled. If such a plan is adopted, the payments to the employees will be deductible in computing the professional corporation's federal income taxes and up to $100 per week may be excluded by each employee in computing his income subject to federal income taxes.

3. On the death of an employee up to $5,000 may be paid to the widow, estate or designated heir of the employee, and such sum will be deductible in computing the corporation's federal income tax but will not be taxable income to the recipient.

4. Upon the retirement of an employee his interest in a professional corporation as a stockholder may be sold and the gain, if any, received will be taxable for federal income tax purposes at capital gains rates rather than as ordinary income. Of course, if the stock is sold to the professional corporation, such corporation will not be able to deduct, in computing its federal income tax, the amount paid for the stock purchased.

5. If a professional corporation keeps its annual taxable income at less than $25,000, it can accumulate up to $100,000 in the professional corporation and pay federal income taxes on such accumulations at a rate of 30%, which will in many cases be lower than the rate the stockholders would have to pay in federal income taxes if these accumulations were distributed to them either in the form of salary or dividends.

6. If a professional corporation has no more than 10 shareholders, it may avail itself of all the foregoing tax advantages, except the one set forth in paragraph 5, and elect to have all its remaining income distributed to and taxed to its shareholders in exactly the same manner as a partnership does.

* * *

With respect to deferred retirement plans, a professional corporation can set up what is technically referred to as a profit sharing plan, pay into such plan annually up to 15% of the compensation of all employees covered by the plan, have such annual contributions deductible in computing the corporation's federal income taxes, and have the amounts paid into the plan for the benefit of employees not taxable to them until distributed to them. Of course, if such a plan is adopted, it will have to cover not only the professional personnel who were partners under the predecessor partnership but also a substantial number of the non-professional personnel. The Internal Revenue Service has rules and regulations with respect to employees who can be excluded from the plan and must specifically approve the exclusion from the plan of any group of employees. In the past the Service has approved the exclusion of males who have not reached 30 years of age and females who have not reached 35 years of age; the exclusion of part time employees; and the exclusion of employees who are paid on an hourly rate basis rather than on a monthly salary basis. In some situations medical groups may be able to adopt similar exclusions. Nevertheless, these rules will require a considerable number of non-professional employees to be covered by any plan adopted by a medical group. Each group will have to determine for itself whether the cost of including these non-professional employees will be off-set by the tax advantages that will accrue to the physicians who were formerly partners.

An example of how such a computation would be made might be helpful.

Assume that there is a partnership consisting of 5 partners, each of whose annual taxable income is $25,000; that each partner takes the standard deductions of 10% in computing his federal income tax; and that each has a wife and two children. Without a qualified retirement plan, each partner's federal tax situation would be as follows (Minnesota income taxes will not be figured in the calculation):

Gross income	$25,000
Less 10% for standard deductions	2,500
	22,500
Less 4 exemptions at $600 apiece	2,400
Taxable income	20,100
Federal income tax	5,300
Spendable income	$14,800

Now assume that this group adopts a profit sharing plan to which it contributes 10% of the annual compensation of each covered employee; that it will be necessary to cover under the plan 10 employees who are not physicians, whose annual salaries aggregate $40,000, and for whose benefit an annual contribution of $4,000 will be made to the plan; and that the cash income of each of the 5 former partners will be reduced by 1/5 of the $4,000 contributed to the plan on behalf of the 10 non-professional employees and by the amount contributed to the plan for his benefit. If the plan were put into effect and if the same assumptions as to deductions and exemptions are used, each partner's federal tax situation would be as follows:

Gross income	$25,000
Less 1/5 of contribution of $4,000 to plan for non-professional employees	800
	24,200
Less 10% contributed to plan for his benefit	2,420
Gross income to be reported for income tax purposes	21,780
Less 10% for standard deductions	2,178
	19,602
Less 4 exemptions at $600 apiece	2,400
Taxable income	17,202
Federal income tax	4,432
Spendable income	$12,770

While each partner's spendable income has as a result of the plan been reduced $2,030, there has been placed in the plan for his account $2,400. Moreover, up to 50% of the amount contributed to the plan for each covered employee can be used to buy life insurance on his life payable to his estate or his heirs. If this is done, each partner can cut back his personal life insurance program by a comparable amount. If each partner now expends $1,200 per year on life insurance, his true spendable income without the plan is not $14,800 as shown above, but rather $13,600. If the plan is put into effect, if it expends the maximum permissible on life insurance on each covered employee, and if each former partner cuts back his personal insurance program by a comparable amount, his true spendable income with the plan is not $12,770 as shown above, but rather $13,970 or $370 more than without the plan. It must also be remembered that the earnings on the $2,400 paid into the plan for each former partner remain in the plan until he retires or dies and are not subject to income taxes.

One point should be kept in mind. Under a profit sharing plan such as outlined above, the corporation will have to pay into the plan each year the same percentage of each covered employee's annual compensation. It will not be possible to contribute in one year 1% of annual compensation for one employee, 5% for another, and 10% for all the rest. While it is possible to vary from year to year the percentage of annual compensation paid into the plan, the percentage paid into the plan in any one year must be the same for all covered employees.

Provisions

The Act provides that a professional corporation may be organized either as a stock company under the Business Corporation Act or as a membership company without stock under the Non-Profit Corporation Act. If a group chooses to incorporate under the Non-Profit Corporation Act, the corporation does not have to be one whose aim is not to make a profit. Its aim may be to make profit for its members.

A professional corporation may be formed by a group all of whose members practice the same specialty or by a group each of whose members practice a different specialty. The Act imposes no restrictions on the types of medical services a professional corporation may furnish.

Groups of three or more physicians will find no difficulties in incorporating or in operating under either the Business Corporation Act or the Non-Profit Corporation Act. However, the situation may not be the same for a group of two physicians or for a solo practitioner.

While the Act requires that a professional corporation must have three incorporators who are physicians, the only connection that incorporators need have with the professional corporation is that they sign the Articles of Incorporation. They need not be shareholders, directors, officers or employees of the professional corporation and the only connection they need ever have with the corporation is to sign its Articles of Incorporation. Therefore, it would seem that a two-member group or a solo practitioner could incorporate by getting one or two friends who are physicians to join in signing Articles of Incorporation.

The Business Corporation Act and the Non-Profit Corporation Act under which the mechanics of incorporation must be accomplished each provide that a corporation must have at least 3 directors and may have as many more as may be desired. The Business Corporation Act requires that a corporation must have a president, a secretary, and a treasurer and may have such other officers as it wishes. **It also provides that any two of the required offices may be held by one person. The Non-Profit Corporation Act provides in effect that the Articles of Incorporation or Bylaws may provide that the functions of president, secretary, and treasurer, which are the required officers, may be exercised by one person.** Since the Professional Corporation Act requires that all directors and officers of a professional corporation must be physicians, it follows that each professional corporation must find at least three physicians willing to serve as its directors and at least one or two physicians willing to serve as its officers, depending on whether it is incorporated under the Business Corporation Act or the Non-Profit Corporation Act. Again it would seem that a two-member group or a solo practitioner desiring to incorporate could meet these requirements by getting friends who are physicians to fill the required directorships and offices that are not held by the two physicians of a two-man group or by the solo practitioner.

It would also seem that there are other ways the solo practitioner might meet this requirement. One would be for three of them to organize three separate corporations, each of which would carry on the medical practice of one of the physicians. All three physicians would then serve as directors and officers of all three corporations but each would own stock in only one corporation. There would appear to be no prohibition against this type of arrangement because while the Act does prohibit a physician from being a shareholder or member in more than one professional corporation, it does not specifically prohibit a physician who is an officer or director of one professional corporation from being an officer or director in another professional corporation.

Another would be for three solo practitioners to form a single corporation into which all three solo practices would be placed. The three would be incorporators, directors and officers of the same corporation but separate financial records would be kept for each practice and each solo practitioner would receive a salary equal to what his solo practice produced. This type of arrangement would be similar to the not uncommon situation where a business corporation has two or more operating divisions and would not appear to be prohibited by the Act.

However, the Minnesota State Board of Medical Examiners has adopted forms which will, for the present at least, make it impossible for two-man groups and solo practitioners to incorporate. Question number 8 of the application form adopted by the Board asks:

> "Is any incorporator, director, officer, shareholder or member an incorporator, shareholder, member, director or officer of any other professional corporation?"

And question number 11 of the application form asks:

> "Is each and every incorporator, director, officer, shareholder and member practicing medicine and surgery as members of one joint group for the common benefit and financial interest of the group?"

It is perfectly clear that question 11 cannot be answered in the affirmative by a solo practitioner or a two-man group which has found friends to fill the directorships and offices not held by the solo practitioner or the members of the two-man group, that question number 8 cannot be answered in the negative if three solo practitioners form three separate corporations for each of which all three solo practitioners act as directors and officers, and that question number 11 cannot be answered in the affirmative if three solo practitioners place their three separate practices in one corporation and keep separate financial records for each practice.

The form does not state what the consequences of an affirmative answer to question 8 or a negative answer to question 11 will be and the Board has not issued any regulation or any statement to explain why these questions were inserted in the application form. However, representatives of the Board have stated unofficially that it is the Board's preliminary view that certificates of registration should be denied to two-man groups and solo practitioners who cannot answer such questions in the manner indicated. Such representatives have added that the Board will review its present position at future meetings to see whether or not it should be changed.

The Act provides that each shareholder or member of a professional corporation must be a physician. As a result, a group which incorporates must make provision for what is to happen when a shareholder or member dies because the estate or the heirs of a deceased physician cannot become shareholders or members in a professional corporation. The provision can be of any type that the group desires and can be the same as the one that the group presently has in its partnership or association agreement. If a group fails for any reason to make provision for getting rid of a shareholder's interest on his death, the Act provides that the professional corporation may purchase a deceased shareholder's stock at its book value at the end of the month immediately preceding the date of death.

Struggles with third parties who desire to control the practice of medicine have long required the devoted common effort of organized medicine. These provisions requiring all directors, officers and shareholders or members to be physicians were inserted in the Act to make sure that laymen would not be able to control or profit from the practice of medicine, a concept which is, of course, basic. So long as this concept is kept inviolate, there can be no conflict with the ethical principles of the American Medical Association. In December 1957 its House of Delegates adopted a resolution to the effect that physicians may ethically join together in any form of organization they desire so long as the ownership and management of the affairs of the organization remains in the hands of licensed physicians.

While the Act is clear that a professional corporation may have a branch office or branch offices, it provides that the location of any office may be changed only after the Board has been notified of the organization's intention so to do.

The Act contains safeguards designed to preserve the traditional relationship between physician and patient. For example, it provides that it does not alter any law applicable to the relationship between a physician and his patient, including liability arising out of the provision of medical care. Also, it provides that it does not alter the law with respect to privileged communications and records and that the State Board of Medical Examiners when auditing a professional corporation shall not have access to books, records or information relating to medical care rendered to a patient by an employee of a professional corporation. Finally, the Act provides that all employees of a professional corporation who render medical services must be licensed physicians.

The Act provides that before a professional corporation may begin furnishing medical services, it must obtain a certificate of registration and vests in the Minnesota State Board of Medical Examiners authority to issue such certificates. The procedure contemplated by the Board is that a group first incorporate and then file its application for a certificate, together with the application fee of $100. After a certificate has been issued, it must be renewed annually by payment of a fee of $25. The fees payable to the State of Minnesota for the privilege of incorporating will depend primarily upon the capitalization of the professional corporation but in no event will they be less than approximately $65. In addition to the fees payable to the Board and the State for the privilege of incorporating, a group incorporating will incur other expenses for a corporate seal, stock certificates, publication of notice of incorporation and a minute book, all of which should not exceed $100, and legal fees, the amount of which cannot be predicted.

Problems

The Professional Corporation Act is not, of course, the answer for all physicians in the state. Groups which incorporate will have to face the same problems that they face as partnerships or associations, such as how do we admit a new member, who controls the group, and how do we pay off a deceased or retiring member. Such problems can, however, be handled in a corporation exactly as they are handled in a partnership or association, though the tax consequences may be different. But incorporation will bring some new consequences and some new problems that must be faced. A few of these will be discussed.

The most important problem to be faced after incorporation is whether or not the professional corporation will be eligible to be taxed as a corporation. It has been assumed by most attorneys that once a medical group incorporated it would, of course, be taxed as a corporation. This is because the Internal Revenue Code imposes an income tax on the net income of all corporations except those specifically exempted by the Code. However, recent developments have indicated that the Internal Revenue Service may not agree with this view and may be taking the position that not all professional corporations are eligible to be taxed as a corporation. On March 2, 1961, the Service published a ruling involving The Colony Medical Group, Incorporated, of Meriden, Connecticut which held that this medical group which had incorporated under the Connecticut Act was eligible to be taxed as a corporation. However, in the ruling the Service examined all aspects of the corporation to see whether or not the corporation met the tests laid down in the Kintner regulation for organizations eligible to be taxed as corporations. It is the writer's understanding that this ruling was published as a warning that corporations organized under professional corporation acts were not automatically eligible to be taxed as corporations but would have to meet the tests laid down in the Kintner regulations. Then on May 1, 1961, a new procedural regulation was issued in which it was in effect stated that rulings with respect to the tax status of professional corporations could not be issued at the district office level but could only be issued from Washington. These two releases emphasize the importance the Service is attaching to the whole matter. Despite this fact any established and substantial group desiring to incorporate under the Minnesota Act should be able to realize the desired tax consequences for the Act is so worded that Articles of Incorporation, By-laws and related documents can be drawn to meet the requirements of the Kintner regulations.

A group of three or less may, however, have more difficulty in establishing its eligibility to be taxed as a corporation. One of the four requirements of the Kintner regulations is that a group have centralized management. On October 5, 1961, Isidore Goodman, the Chief of the Pension Trust Branch of the Internal Revenue Service, made a speech in which he implied that there is no centralized management unless one or more, *but less than all,* of the members has authority to make management decisions. Since the management of a corporation is by law vested in its Board of Directors and since the Minnesota Act requires three directors, a group of three or less would have all members of the group serving on the Board of Directors and would have no physician employed who is not a director. If Mr. Goodman's statement reflects the views of the Service on this point, a group of three or less would not, therefore, be able to meet the requirements of centralized management. The first case involving the Minnesota act that is presented to the Internal Revenue Service for a ruling will undoubtedly establish the pattern for those that follow. It is hoped that this case will involve a group of substantially more than three and that the papers will be carefully drawn to meet the requirements of the Kintner regulations and the Colony Medical Group ruling so that the Internal Revenue Service will not be able to issue an unfavorable ruling. If the first case is a weak one and results in an unfavorable ruling, other groups whose cases are strong may find the work involved in obtaining a favorable ruling considerably increased.

One further problem should be mentioned. Since the Service issued its ruling with respect to the Colony Medical Group, no further rulings have been issued involving professional corporations. This may mean only that the Service is overworked and has not had time to get at the many requests pending before it. Or it may mean that the Service is intentionally dragging its feet and at the same time drafting suggested legislation which will deny to medical groups the benefits the Professional Corporation Act was designed to give.

Social Security and Withholding

If a group incorporates, the physicians who were partners or associates in the predecessor organization will become employees of the professional corporation. As such they will be covered by social security. They and the corporation will both have to pay social security taxes. The combined tax is 6% of the first $4,800 of salary paid or $288 per year. The rate is scheduled to rise to 7% on January 1, 1963, to 8% on January 1, 1966, and to 9% on January 1, 1969. In addition as employees they will be subject to withholding for both federal and state income taxes. There is no way that a professional corporation can escape having its employees covered under social security or under withholding.

Management

Physicians who have been practicing in groups which have no head and where unanimous consent is required for many decisions may be reluctant to form a corporation where management is vested in a board of directors and where there will be a president who is the chief executive officer. There are two things that may be done to minimize this problem. First, all physicians who were partners or associates in the predecessor organization may be named to the board of directors of the professional corporation and a By-law may be adopted requiring unanimous decision of the board for action on special or on all matters. However, in view of the recent statement of Mr. Goodman referred to above it is probably advisable to have one or more physicians who are not members of the board. Second, the presidency can be rotated upon a monthly, quarterly, annual or any other satisfactory basis.

Personal Holding Company

The federal income tax law imposes upon personal holding companies a penalty tax which amounts to from 75% to 85% of undistributed personal holding company income. A corporation becomes a personal holding company if more than 50% of the stock of the corporation is owned by not more than 5 individuals and if at least 80% of the income of the corporation is "personal holding company income." The part of the definition of personal holding company income that medical groups must be aware of is the part that defines it to include income received from personal service contracts if some person other than the corporation can designate the person who is to perform the personal services and if 25% or more of the corporation's outstanding stock is owned by the person who is to perform the personal services. This provision will not be a real problem for medical groups which incorporate except in the rare case where a corporation derives 80% or more of its income from contracts to furnish medical services and where the contracts give the recipients of the medical services the right to designate the physician who will furnish the medical services. In such a situation the group can avoid the tax either by adjusting salaries so as to leave no income in the corporation at the end of the year or, if the corporation has 10 or less shareholders, by having it elect to be taxed as a partnership.

Unreasonable Salaries

The Internal Revenue Service frequently attacks the salaries paid by corporations which have a limited number of shareholders claiming that the salaries are unreasonably high, that they are in effect dividends, and that for this reason only so much of the salaries as are reasonable should be deductible by the corporation in computing its federal income tax. A medical corporation might well be attacked by the Internal Revenue Service on this theory. If it is so attacked and if the attack is successful, an additional tax will be imposed on the corporation at a time when it has paid out in the form of salaries the money that would otherwise be available to pay the tax. It would seem that in most cases the Internal Revenue Service would have little chance of success in attacking a medical corporation on these grounds. In order to be successful, the Service would have to show that the salaries paid to the physicians who are employees of the corporation are unreasonable in the light of the prevailing scale of remuneration for comparable work in a comparable area. Therefore, so long as salaries paid by physicians by professional corporations are kept within the range of what the physicians previously received as partners or associates and so long as there are other physicians in the area who are receiving income either as solo practitioners or as partners or as salary from other medical corporations comparable to the salaries being paid by the professional corporation which is under attack, it would seem that the Service would have little chance of success.

There is one problem in the transition from a partnership or an unincorporated association to a medical corporation that requires considerable thought in order to avoid bunching of income of the former partners or associates in one year. In most cases the predecessor organization will have been on a cash basis for income tax purposes (i.e. reporting income only when collected) and will have substantial accounts receivable which will be uncollected when the medical corporation is formed. In most cases it will be best to continue the predecessor organization in effect until all such accounts receivable have been collected rather than to transfer such accounts receivable to the professional corporation. The professional corporation's income will, therefore, be derived only from medical services performed after it commences operations. Because the physicians who were partners or associates of the predecessor organization will be receiving salaries as employees of the new corporation, careful planning will be required to avoid any bunching of income in a single tax year. In most cases the problem can be avoided or at least minimized by having the payment of salaries to the physician employees deferred or partially deferred so as to even out the physician's taxable income over a two or three year period which includes the year of transition. The exact manner of handling the problem will depend on whether the predecessor partnership was on a calendar or fiscal year basis, the amount of the accounts receivable involved, the proposed salaries, and other similar considerations. An example may illustrate a typical situation and the possible means of handling it.

Assume a medical partnership which for income tax purposes uses a fiscal year ending February 28 and that its partners all report their income (as most individuals do) on a calendar year basis; assume also that a professional corporation is formed and takes over the medical practice of the partnership on March 1, 1962. Because the partnership year ends February 28, 1962, each partner already has a normal year's income in 1962 without drawing any corporate salaries. To avoid making the former partners' 1962 income abnormally large no salary, or at most only a small one, should be paid prior to December 31, 1962, to each former partner in his capacity as employee of the new corporation. If the corporation picked a fiscal year ending January 31, 1963, or February 28, 1963, it would pay to such physicians after January 1, 1963, the salaries that might otherwise have been paid to them in 1962 and thus still get the same deductions for salaries paid as though they were paid ratably over the corporation's tax year. Of course, because the partnership was continued there would also be partnership income in 1963 for the year ended February 28, 1963, but this would be substantially less than a full year's income from the predecessor partnership because it would be only from accounts receivable existing on February 28, 1962. Salaries for the balance of the 1963 calendar year might again have to be held down and in part deferred until after January 1, 1964. However, by such planning the transition can be made without any insurmountable tax problems.

The foregoing example represents the problem in its most aggravated form and the most aggravated form will occur with respect to predecessor organizations which are on a fiscal year rather than a calendar year basis for income tax purposes. A calendar year partnership will have a much less difficult transition problem, but again salaries will probably have to be held down somewhat during the initial year while the predecessor partnership's accounts receivable are being collected.

Conclusion

The Minnesota Professional Corporation Act was designed to and does offer to physicians an opportunity to obtain for themselves many income tax advantages that have for years been available to officers and employees of business corporations. The Keogh bill, often referred to as H.R. 10, is designed to do the same thing. However, the Keogh bill has been before Congress for more than 10 years and Congress has just adjourned again without passing it. Moreover, in view of the Treasury Department's objections to the bill, it appears that if the Keogh bill is ever passed, it will have so many exceptions and conditions tacked on to it that it will not do for the self-employed professional man what its sponsors have hoped it would do. Therefore, Minnesota physicians in their own self-interest should at least make an examination with their lawyers and tax advisers to see what incorporation might mean for them.

Abstracts and Briefs

POSTOPERATIVE INTUSSUSCEPTION

During the past two decades nine infants or small children have developed intussusception as a postoperative complication following abdominal surgery at Los Angeles Children's Hospital. Three had recurrent intussusception after previous surgical reduction of intussusception. The remaining six followed apparently unrelated conditions, such as bleeding Meckel's diverticula, hypertrophic pyloric stenosis, adrenal hyperplasia, mesenteric adenitis and exstrophy of the urinary bladder.

Time intervals between the primary procedure and recognition of the postoperative intussusception varied from 5 to 26 days, although the actual occurrence of the intussusception was obviously earlier in some instances.

Intra-abdominal complications following surgery have been described by others, the more common ones being postoperative acute cholecystitis, acute pancreatitis, perforation or hemorrhage from a duodenal ulcer, and volvulus. Volvulus has been the more common in pediatric patients, but at Children's Hospital intussusception has been three times more common postoperatively than volvulus.

The diagnosis of this complication can be extremely difficult under the circumstances. In this series the usual clinical impression was that the patient had intestinal obstruction secondary to postoperative adhesions. Emphasis is given to the fact that the common characteristic symptoms of intussusception may not occur. The features in these cases were those of acute small bowel obstruction with vomiting and distention being the prominent features. Pain was not prominent and there was no characteristic periodicity. All had vomiting, but only one had rectal bleeding. The author suggests that intussusception be considered in postoperative pediatric patients when signs and symptoms of intestinal malfunction reappear after the beginning of a return to normal gastrointestinal activity.

The author has aptly focused attention on a rather atypical picture which may prove confusing in the postoperative pediatric patient. Perhaps of more importance than the identification of the disorder is the early recognition of an acute surgical abdomen and institution of definite surgical correcton without time consuming diagnostic, temporizing, or therapeutically inadequate measures.

Robert N. Hammerstrom, M.D.
Minneapolis, Minnesota

"Intussusception as a Postoperative Complication in Pediatric Surgery" Hays, Daniel M., S.G. & O. 112:583, May, 1961.

BREAST CANCER FOLLOW-UP

The follow-up results of 241 patients with carcinoma of the breast were started in 1949. None were lost to follow-up. It was found that between the five and ten year marks of the follow-up time an additional 50% of the patients were dead of the disease, thus indicating the significance of ten-year follow-up.

Two hundred four cases of the so-called common types were divided into two groups, a well-delimited and a serrated, grossly irregular group. Less than one-third of the well-delimited group consisted of the medullary carcinoma.

With this division of types into well-delimited and irregular, an evaluation of the curability was made. The well-delimited had a cure rate of 80% as opposed to 38% for irregular tumors. The more curable, well-delimited cancers were about one-third larger than the irregular tumors and considering only the cured tumors, the well-delimited tumors were more than half again as large as the irregular. These also showed a marked lymphoid stromal reaction. The mean size of the highly curable lesions was 4 cm., double that of the cured irregular tumors.

The authors found no support for the common concept that upper, outer quadrant lesions were more curable and the irregular and well-delimited tumors occurred with equal frequency in this segment. A slightly better cure rate was found when a greater lymphocytic reaction was present (55% vs. 44%).

More than one-third (38%) of the cured patients had auxiliary metastasis with the frequency of the metastases being the same for the more curable well-delimited tumors as for the tumors of irregular gross contour among the group of cured patients.

The authors have particularly emphasized the value of ten-year follow-up in evaluating results of breast cancer and most particularly the significant difference between the grossly well-delimited as compared to the irregular gross contour of the lesion pointing out that this feature appears to be extremely important in prognostic assessment in any particular case of breast carcinoma.

J. H. Strickler, M.D.
Minneapolis, Minnesota

"Clinico-Pathologic Analysis of the Surgical Curability of Breast Cancers: A Minimum Ten-Year Study of a Personal Series," Nathan Lane, M.D., Husnu Goskel, M.D., R. A. Salerno, M.D., C. D. Haagensen, M.D. Annals of Surgery 153:483, April, 1961.

Book Reviews

WHAT TEENAGERS WANT TO KNOW—Florence Levinsohn, B.A., M.A. in consultation with G. Lombard Kelly, A.B., B.S.M., M.D., Budong Press Co., Chicago, Illinois, 1961, 89 pages. Price: $1.50.

This booklet tells exactly what the title implies. Its opening sentences state, "This book is for young people who are asking questions about themselves, their social and sexual development, their feelings and attitudes. The years between twelve and eighteen are naturally full of questions because so much happens so fast."

The opening chapter describes adolescence and details its changes. The sexual anatomy of the male and female is discussed. Diagrams are used in the portion of the booklet dealing with reproduction and fertilization. Dating, with its anxieties and dilemmas, is then discussed, with the attitudes toward dating and the dangers of "going steady" set forth. Another chapter of this book is given over to the discussion of extramarital intercourse and its complications. There is then a short chapter on masturbation and homosexuality.

"Becoming Men and Women" is a portion describing the changing sex role and the equality of man and woman. In sequence, maturity and the teenager's thoughts about the future are outlined and several questions are raised about early marriage.

The final chapter deals with the teenager's relationship with his parents. Suggestions are offered to aid in better adjustments with parents.

This publication is well written and quite timely. However, the young teenager would have great difficulty understanding much of what is written. I consider it to be recommended reading for the older teenager, the high school teacher and parents. The family doctor should be aware of the existence of such a booklet so that he may recommend it. One might question the advisability of this publication being available only through professional sources, as is stated on its cover.

George M. Cowan, M.D.
Duluth, Minnesota

HEREDITY IN OPHTHALMOLOGY. By Jules Francois. St. Louis, C. V. Mosby Company, 1961. 731 pages, 629 figures, including 6 in color, chapter references, subject and author index. Price: $23.00.

This monumental volume by the Professor of Ophthalmology at the University of Ghent, Belgium, one of the most prolific of European ophthalmologic investigators, reflects the author's long and painstaking study of the relationship of hereditary factors to diseases of the eye. One gathers, although this is not stressed by the author, that in a small country with a stable population like Belgium the case material is plentiful due to consanguinity.

Francois begins by lucidly reviewing general genetics, various modes of inheritance, environmental factors, statistical concepts and Sorsby's classification of inherited diseases. The latter, with examples of each, includes: (1) congenital (present at birth), ptosis of the lids; (2) abiotrophies (developing in a normal part later in life), corneal dystrophy; (3) phakomatoses (neuroectodermal dysplasias), neurofibromatosis; (4) malignant tumors, retinoblastoma; (5) endocrinopathies, diabetis mellitus; (6) metabolic, albinism; (7) functional, color blindness; (8) syndromes, representing combinations of the above. The major portion of the book is devoted to a detailed description and illustration of all known eye disorders under these categories, many from the author's personal observation through several generations.

Of particular interest to the non-ophthalmologist is the excellent section on genetic counselling, an area where most of us become involved at some time. Asymptomatic carriers of potentially serious syndromes can be detected in many cases. Treatment of hereditary diseases utilizing the newer techniques such as corneal transplantation is hopeful. Aside from moral considerations, sterilization is not effective for the following reasons: (1) carriers of abnormal recessive genes are not detected; (2) occurrence of chance mutations in normals; (3) occurrence of unrecognized dominant abnormalities of low-penetrance. The data on specific pre- and postmarital advice is drawn from Cuendet's tables which can be found in **Eugenics Quart.** 4:139, 1957. For example if two normal parents have had a child with retinoblastoma, the chances of any future child being affected is roughly one in thirty; for albinism one in four and so on.

William S. McClanahan, M.D.
U. S. Army, Chinone, France

P-Q-R-S-T, A GUIDE TO ELECTROCARDIOGRAM INTERPRETATION—Joseph E. F. Riseman, M.D. Fourth Edition (May 1960) MacMillam Company

This electrocardiogram reference text has been brought up to date in the current edition and is planned for the beginner in electrocardiographic interpretation and is not a thorough text by any means. It is intended to be used as a practical guide during electrocardiogram readings so that comparisons can be made directly from this book with some associated explanatory comments. The shortcomings of this atlas are well recognized by the experienced electrocardiographer, but it is designed for the beginner and should serve some useful purpose, as it has already for so many years.

John B. Moyer, M.D.
President, Minnesota Heart Association

President's Letter

Another session of Congress has now passed into history. Over-looked by many of us because of the shadow cast by the King-Anderson Bill, was the fight over the Federal Aid to Education. This is mentioned to emphasize the fact that monetary subsidization by the Federal Government in the educational field, as it applies to the needs of and enrollment of, the students could be de-emphasized by voluntary efforts by all of us.

In the weeks to follow, we all will be contacted by our local committees for our contributions to the American Medical Educational Foundation. This foundation is doing a fine job on a national scale, and we all subscribe to its efforts. In so doing, however, we must not forget that we have an educational foundation in our State organization also.

The organization of the Minnesota State Medical Association Foundation was completed by the Council on December 13, 1958. The establishment of this foundation opens up avenues for the development of scientific and philanthropic purposes. Thus it makes it possible for our members to bestow gifts and bequests to the Physicians' Assistance Fund, and to the other programs of the Association. We have been assured by the Internal Revenue Service that such gifts and bequests will be deductible for tax purposes.

What is the Minnesota State Medical Association Foundation? At the present time, the nine members of the Council are directors of the Foundation. The Committee on Physicians' Assistance has been designated as a committee of the Foundation to continue its purpose of developing and carrying out the program of the Association's Committee of Physician's Assistance.

Likewise the Association's Rural Medical Student Scholarship Committee was designated as a committee of the Foundation. Thus this latter committee also will continue to carry on the rural medical student scholarship program of the Association. In addition, the Council established a Long Term Loan Fund to aid needy students, and this Fund is under the jurisdiction of your Foundation.

What have these various committees accomplished in their comparative short span of existence? The Physician's Assistance Fund has aided our needy, deserving physicians and their widows. The Committee has been called upon to administer such aid to qualified recipients in sixteen instances. The Rural Medical Scholarship Fund has aided nine general practitioners since its inception, and thus has provided rural communities medical care they might not have received otherwise. Our Long Term Loan Fund is the youngest of our philanthropies, but in its short existence, five loans have been executed to deserving medical students, so they could continue their work in school.

Although not directly under the jurisdiction of this Foundation, your Association also aids in the guidance of the Emergency Loan Fund. This fund is directly under the administration of the Minnesota Medical Foundation, and is called the Herman Johnson Memorial Emergency Loan Fund. This revolving fund of $4,000 is made up of the original Herman Johnson Fund with supplementation from your Association's funds.

Since establishment in November, 1951, 154 loans have been made to medical students, totalling $19,164.00 without a single loss to delinquent accounts. Borrowers may obtain up to $200 for 90 day periods without interest charges. This emergency loan fund has been most appreciated by the participants, as it is used mainly to satisfy small sum commitments that arise unexpectedly in every student's life: the sudden realization that next quarter's tuition is due, or those new books have to be purchased, etc. I'm sure you recall those instances in your school experience.

We, indeed, have a loan program of which to be proud. It is flexible; versatile; and contributions to it are tax-deductible. We are all well aware that $4 of our dues are earmarked for the Physicians' Assistance Fund, but the other funds would welcome supplementation by our gifts and bequests. Let's help our students the voluntary way. Let's support our National and State Educational Foundations. They both serve a purpose, and their separate purposes do not weaken our support by duplication of effort. Let's not turn to "UNCLE" for everything. He might get the idea that as long as he's supporting us, he might as well adopt us. We might not like the terms in the adoption papers.

C. L. Oppegaard

C. L. Oppegaard, M.D.

President

Minnesota State Medical Association

Editorials

THE ALCOHOLIC

There are some words in the English language that the average man dreads to hear in connection with himself. A few of the words are alcoholic . . . drunkard . . . neurotic . . . leper . . . and malignant cancer. In our formative years, because of the frequently associated immoral implications, we came to associate the word alcoholic with a moral leper — someone to be shunned. When we think of an alcoholic we think of skid-row. Actually, less than fifteen percent of the nation's problem drinkers are on skid-row. Eighty-five percent or more are your neighbors. Alcohol invades the ranks of all walks of life and does not exclude the medical profession, the dental profession, or the clergy. If you shake any family tree hard enough, an alcoholic will tumble out.

The writer, who is a recovered alcoholic, has gone many times to the medical profession for help with a hangover. We know from experience what the doctor is up against. Of all the sick people the doctor is called upon to help, the alcoholic is the least cooperative and, generally, he is the poorest paying customer. One thing the practitioner should keep in mind is that the alcoholic did not start out in life to become an alcoholic any more than any other illness started out to conquer its victim. When the medical man has a clear understanding of the disease in all of its ramifications only then can he know how far he can go toward alleviating the immediate effects of a drinking bout. It will help him to know what advice to give toward preventing future mishaps.

Dr. James J. Smith, who has been a faculty member of New York University-Bellevue Medical Center, has done intensive research with active alcoholics. That New York hospital is not far from the Bowery, which furnishes endless specimens for study. Dr. Smith divides his alcoholics into two classes — phase one and phase two. The phase one type he compares to the diabetic whose disease is controlled by diet alone. This alcoholic can be permanently helped by group therapy, such as Alcoholics Anonymous. Phase two, like the diabetic requiring insulin, must have diet and the hormone, too. He will require, at least for some time, dosages of adrenal cortical extract in addition to help from an Alcoholics Anonymous group.

To quote a few lines from Dr. Smith: "Original work from two different laboratories has shown that there are hormonal differences between the alcoholic and the normal in stressful situations. At New York University we have found that there is a defect in the stress adaptive hypothalamic-pituitary-adrenal cortex linkage in the alcoholic. At the Payne Whitney Laboratories of New York Hospital, it has been found that in the emotional states of anxiety, tension, and resentment there are hormonal changes in the blood. It was further found that these hormonal changes in the blood of anxious, tense, or resentful alcoholics could be abolished by the taking of alcohol. It is not known whether the hormonal change precedes the disturbed emotional state or follows it."

Some of us who are working in the field of alcoholism proceed on the theory that the alcoholic is sick in three areas, i.e., physical, emotional, and the spiritual. We know from experience that once alcohol has entered the system of the alcoholic it produces a disturbance which will run its headlong course. The alcoholic has no more control over the effect that alcohol produces within him than any of us have over the law of gravity if we fall out of a tree. You casual imbiders, you social drinkers, will never experience the fear which seizes us when we are attempting to come out of a drinking bout, the knowledge that, whichever way we turn, booze is our master, booze is now handling us — we cannot handle it. Emotionally, we cannot handle stressful situations. We seize on the slightest excuse or provocation to drink. We have to learn to grow up and face today's problems just for today. We cannot tackle our whole life problems at once. Spiritually, we have lost faith in ourselves, we are suspicious of others, and we have lost faith in God. We think he has abandoned us. The alcoholic must have help in all these areas if he is to adjust to the fact that he can never handle alcohol in any form, not even medicinally.

Selden Bacon, sociologist at Yale University, divides his alcoholics into two types — the primary and the secondary. The primary type embraces the drinker who was maladjusted before he encountered alcohol. He had an early neurosis and, when he finds the escape properties of alcohol, he has trouble with alcohol from then on. The secondary type is a fairly normal being to begin with. When he is introduced to the drinking custom he takes to it with zest. In time he becomes a heavy drinker, not yet an alcoholic. As time goes on he experiences a personality change. In many instances he changes from drinking in a bar or at social events to drinking alone, trying to hide the fact that he has lost control.

There are thousands of housewives who could be helped if they were brought out of their lone environment and exposed to some cultured woman who has successfully arrested her drinking problem. It might be a good idea for all medical men to cultivate the acquaintance of some recovered alcoholics, perhaps members of Alcoholics Anonymous, in order to enlist their aid for patients who need help and understanding. If you toss a person hapharzardly into any group, whether it be a church, social, medical, or therapy group, he may become confused and frightened and never return. Some of us, for purposes of comparison, distinguish between the alcoholic and the drunkard. The alcoholic, we say, is a compulsive drinker; some force stronger than he can control lures him to the first drink and then the compulsion sets in. He is an obsessive drinker who drinks sometimes to relieve tension or fear. The alcoholic has insight. He wants to quit. He seeks control for years and then has to admit that this is impossible. The alcoholic has remorse for the harm he does his loved ones and for his loss of self-respect. He is the person who can generally be helped. The drunkard drinks through choice. He can be the richest man in town or the veriest bum. He cannot, or will not, see himself as others see him. That is the way of life he has chosen. He has no remorse, no insight. He is a difficult person to deal with. Sometimes, however, when he sees the happiness engendered in the lives of those he has drunk with, men who have quit drinking and joined some form of therapy, he might become willing to expose himself to some therapy. Some medical men are using Antabuse on their alcoholic patients. We think this may be practicable if the patient is hospitalized for several days, fed Antabuse and then put "over the top." This is being given three or four ounces of alcohol so he knows what to expect if he takes a drink after dosing himself with Antabuse. Having him in the hospital enables the physician to use all medical means to overcome the effect of the drug and alcohol. Antabuse, to many of us, represents a therapy of fear . . . fear of the conquences if a drink of alcoholic beverage is taken while Antabuse is present in the body. We know of one respected practicing physician who puts his patients on Antabuse and then guides them to Alcoholics Anonymous. He tells them to drop the treatment when they have acquired sufficient knowledge of the program to keep them dry for that day.

An Alcoholic Anonymous

References and literature can be obtained from the the following sources:

1. General Service Office of A.A. P.O. Box 459—Grand Central Station, New York 17, N.Y.
2. National Council on Alcoholism, Academy of Medicine Building, 2 East 103rd St., New York, N.Y. (Primer on Alcoholism by Marty Mann)
3. Department of Public Welfare, c/o Pioneer House, 250 South 4th St., Minneapolis, Minnesota.
4. Hazelden Farm, Lindstrom, Minn.
5. Dellwood (For Women) White Bear, Minnesota.
6. Willmar State Hospital, Willmar, Minnesota.
7. Asbury Hospital, Minneapolis, Minnesota.
8. Alcoholics Anonymous, Federal 9-4581—Minneapolis, Capital 2-6536—St. Paul.

PEOPLE NEED PEOPLE

IN A GROUP of one hundred fifty nine male chronic alcoholics from the Minneapolis City Workhouse each with ten or more commitments to the Workhouse, it was found that fifty percent did not have relatives in the State of Minnesota. One third were unable to give the addresses of any "next of kin." Most of those who did have relatives in the area were reluctant to give their addresses. A wife, who was successfully contacted, indicated that she would not be interested in participating in a proposed project which would involve her and her alcoholic husband. The fact that people are not available or are not motivated to work with these severe chronic alcoholics may account for their failure to be integrated into the Alcoholics Anonymous program.

Studies of children and adults have pointed up the importance of close human contact in the prevention of serious emotional and physiological problems. The classical studies of Goldfarb[4] and Spitz show the importance of human warmth and interest in getting children to develop into normal, happy individuals.

Studies have also shown that elderly people admitted to hospitals, because of organic illness, are more likely to recover and be discharged if someone writes to them or comes to visit them.[1] Observations done on chronic schizophrenics in State hospitals indicate that one prominent factor, common to those who do not recover, is the lack of interested relatives.[2, 3] If no one writes to them or indicates they want them back, they are less likely to recover.

Competent medical observers report that death is likely to occur within a few days when an individual is, with finality, separated from his group as is done in certain African tribes (Voodoo deaths). This occurs in spite of adequate food and water.[5]

While endeavoring to rehabilitate the chronic psychotic, such as was done in the "Vermont Study," it was shown that the psychotic patient needs someone to take an active enduring interest in him if he is to recover enough to be discharged. In the Vermont studies these workers were not particularly trained personnel, but they were persistently interested in the psychotics and became involved with them.[6]

These observations tend to corroborate the long-held common sense belief regarding the universality of people's need for each other. Chronic alcoholics need others too. A partial solution to the problem is to get people to work with them.

Ivan W. Sletten, M.D.*
Frank J. DeMars**
Minneapolis, Minnesota

*Instructor. Department of Psychiatry, University Hospitals.
**Former Treatment Officer. Minneapolis City Workhouse.

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1. Fogel, E. et al: "Problems of the Aging: Conclusions Derived from Two Years of Interdisciplinary Study of Domicilary Members in a Veterans Administration Center." Am. Jour. Psy. Vol. 112, #7, p 725, 1956.
2. Orr, W. F. et al: "Factors Influencing Discharge of Female Patients From a State Mental Hospital." Am. Jour. Psy. Vol III:2. #7, p 577. 1955.
3. Morgan, N. C.: "Failure in Psychiatry; The Chronic Hospital Patient." Am. Jour. Psy. Vol 113, #9, 1957.
4. Goldfarb, W.: "Effects of Psychological Deprivation on Infancy and Subsequent Stimulation." Am. Jour. Psy. Vol 102:1. #2, p 18, 1945.
5. Cannon, W. B.: " 'Voodoo' Deaths." Am. Anthrop. Vol 44: #2, 1942.
6. "Factor the Emotional Factor in Medical Practice." Vol. I: #12. 1960. "Program Saves 'Hopelessly' Ill." Copyright 1960 by Prof. News Bur. Inc.

WHAT'S YOUR DIAGNOSIS: THE ANSWER

From Page 471

The correct diagnosis was Granulosa-cell Tumor: it might have been suspicioned on the basis of soreness and engorgement of breast and greater number of cornified cells, suggesting female hormone activity.

Letters to the Editor

Your opinions are sought as "Letters to the Editor." Any signed letter will be considered if it is beneficial to the medical practice as a whole. The opinions expressed in this section do not necessarily represent the opinions or policies of MINNESOTA MEDICINE or the Minnesota State Medical Association.

To The Editor:

The copies of the MINNESOTA MEDICINE Civil Defense issue which you were kind enough to forward to Governor Brown and to me, have been carefully reviewed by Dr. Cecil H. Coggins, Chief of our Medical and Health Division, and his staff and they share my desire to express to you our deepest admiration for your success in collecting and publishing such a splendid Civil Defense publication.

Last year at the Minneapolis meeting of the United States Council on Civil Defense, I became aware of the outstanding work which was being done in Minnesota and this Civil Defense issue of the State Medical Journal reflects that fine program.

Allan K. Jonas
Director
California Disaster Office

Dear Editors:

It was gratifying to note the straightforward report on the AMA testimony against the Kefauver-Celler bill in your August issue. This insidious legislative proposal, if enacted, would have a major effect on the private practice of medicine by slowing the discovery and development of new and important drugs. Most ominous of all, however, is the bureaucratic control that it would give the Secretary of Health, Education and Welfare over the medical profession by giving Government scientists the authority to decide what new drugs shall be made available to practicing physicians.

Robert J. Benford, M.D.
Pharmaceutical Manufacturers Assn.
Washington D. C.

Dear Editors:

Medical Journals in the past few years have been largely free from the advertisement of known harmful products such as cigarettes and I was wondering why our good State Medical Journal is having to stoop to the level of carrying ads on cigarettes, against which evidence is piling up daily as being detrimental to health.

I know that the appearance of this ad does not mean endorsement by the medical profession, however, a journal is measured by its advertising to some extent and in indirect endorsement is insinuated.

It is my desire to register a protest as a member of the Minnesota Medical Association and recommend that we delete this type of advertising and do not aid the spread of propaganda for the cigarette industries.

Leo Herbert, M.D.
Thief River Falls, Minn.

Dear Editors:

I was disturbed recently to note an advertisement of cigarettes in the August issue of MINNESOTA MEDICINE. Seeing this "ad" causes me to raise the question as to whether, in view of the evidence concerning the ill-effects of cigarette smoking, it is appropriate for a high-quality medical magazine to carry cigarette advertising.

Some physicians as well as the spokesmen for the tobacco industry maintain that the relationship between cigarette smoking and lung cancer has not been proved to be one of cause and effect. On the other hand, a recent survey of medical opinion by the National Opinion Research Center of the University of Chicago reports that 64 percent of the physicians interviewed stated that they believe that the relationship of cigarette smoking to lung cancer is a causal one.

I am sure that MINNESOTA MEDICINE would not accept an advertisement of a drug which an appreciable number of physicians believe to be potentially harmful. Would it not be desirable to apply the same standards to the advertising of other preparations or products?

I have always been proud of MINNESOTA MEDICINE as the official journal of my own state medical society. I would regret to have to make any apologies for it.

Harold S. Diehl, M.D.
American Cancer Society, Inc.
New York

The Art of Medicine

PR

Carl H. Woyke
Editor

MEMORANDUM

To: Members of the Minnesota State Medical Association
From: Robert D. Semsch, M.D., Chairman, Public Health Education Committee
Re: The new Minnesota State Medical Association "Doctor, Tell Me" radio series

The 1961-62 "Doctor, Tell Me" radio series began Monday, October 2. This is the sixth year that Minnesota radio stations have scheduled "Doctor, Tell Me" as a public service, in cooperation with the Minnesota State Medical Association.

During this time the interest in this five minute program heard Monday through Friday, has increased to include 36 stations. Participating in the new series are representatives of the various medical specialties as well as family doctors.

Here's how you can help make the new series a success:

. . . Because the damand on radio stations for public service time is great, a letter of appreciation to the program director from your county society is very much in order. Thank him for the station's participation. Offer the cooperation of your Society to supply information when requested.

. . . Publicize "Doctor, Tell Me" to your patients by (A) preparing a plaque or a poster announcing the "Doctor, Tell Me" series. Be sure to include the time and the station. (B) prepare an insert with fee statements urging patients to listen to these programs for authentic health information.

. . . Send to the Minnesota State Medical Association, 496 Lowry Medical Arts Building, St. Paul 2, Minnesota, samples of any promotional materials prepared by your Society for "Doctor, Tell Me."

Your cooperation in this important Public Health Education project is appreciated.

THE 1961-62 "DOCTOR, TELL ME" PROGRAM PARTICIPANTS ARE AS FOLLOWS:

October 2-6	Dr. David W. Feigal, Wayzata, Family Doctor
October 9-13	Dr. John F. Briggs, St. Paul, Internist
October 16-20	Dr. Louis L. Flynn, St. Paul, Child Psychiatrist
October 23-27	Dr. Harold G. Ravits, St. Paul, Dermatologist
October 30-November 3	Dr. Leonard Arling, Minneapolis, Industrial Physician
November 6-10	Dr. Robert A. Green, Minneapolis, Hemotologist
November 13-17	Dr. Robert W. Reif, White Bear Lake, Family Doctor
November 20-24	Dr. Maurice L. Straus, St. Paul, Family Doctor
November 27-December 1	Dr. John F. Briggs, St. Paul, Internist
December 4-8	Dr. Maurice L. Straus, St. Paul, Family Doctor
December 11-15	Dr. Harold G. Ravits, St. Paul, Dermatologist
December 18-22	Dr. David W. Feigal, Wayzata, Family Doctor
December 25-29	Dr. Robert W. Reif, White Bear Lake, Family Doctor

HERE ARE THE STATIONS INCLUDED ON THE 1961-62 "DOCTOR, TELL ME" RADIO PROGRAM NETWORK

CITY	STATION	TIME	PROGRAM DIRECTOR
Albert Lea	KATE	*	E. A. Van Alstyne
Alexandria	KXRA	11:00 A.M.	Ken Tessmer
Austin	KQAQ	*	
Benson	KBMO	1:25 P.M.	Bob Zellmer
Brainerd	KLIZ	2:50 P.M.	R. L. Charries
Cloquet	WKLK	11:55 A.M.	Dick Swan
Crookston	KROX	4:05 P.M.	Jerome A. Dahlberg
Detroit Lakes	KDLM	2:25 P.M.	Norma Sandin
Duluth	KDAL	6:40 P.M.	Carl Casperson
Ely	WELY	6:35 P.M.	Vince Hallett
Eveleth	WEVE	6:40 P.M.	Laura Jannish
Fairmont	KSUM	5:55 P.M.	Tom Corniea
Fergus Falls	KOTE	11:15 A.M.	George Brooks
Grand Rapids	KOZY	9:10 A.M.	R. E. Bullock
Hibbing	WMFG	6:05 P.M.	Ron Marinelli
International Falls	KGHS	1:30 P.M.	Daniel D. Ganter
Litchfield	KLFD	*	Frank W. Endersbe
Little Falls	KLTF	9:55 A.M.	John H. Lemme
Mankato	KYSM	11:30 A.M.	Charles F. Wetherall
Marshall	KMHL	10:10 A.M.	Gilmore Frayseth
Minneapolis	KUOM	12:10 P.M.	Audrey June Booth
Montevideo	KDMA	8:40 A.M.	Byron Zurn
Morris	KMRS	2:30 P.M.	Jim Bellman
Ortonville	KDIO	11:00 A.M.	Marie Thompson
Owatonna	KRFO	10:00 A.M.	Duane Allen
Pine City	WCMP	8:25 A.M.	Robert P. Schuller
Red Wing	KCUE	10:30 A.M.	Howard Trell
Redwood Falls	KLGR	*	Gilmore Frayseth
Rochester	KWEB	9:35 A.M.	Dave Jaye
St. Cloud	KFAM	3:55 P.M.	Terrance P. Montgomery
St. Peter	KRBI	2:30 P.M.	La Mar Hay
Thief River Falls	KTRF	7:15 P.M.	Don Olson
Willmar	KWLM	10:00 P.M.	William Linder
Windom	KDOM	5:25 P.M.	Sandra Wendel
Winona	KWNO	*	Charles Williams
Worthington	KWOA	*	Ralph E. Sheperd

*Time to be announced at a later date

Minnesota Blue Shield

In October, Minnesota Blue Shield began statewide sale and promotion of hospital coverage in addition to its medical-care plan.

Hospital expense benefits will be included in the Blue Shield medical contract as a rider, and will not require establishment of a new organization or issuance of a separate contract.

The Blue Shield medical-care plan will continue to be available without hospital coverage.

The House of Delegates of the Minnesota State Medical Association approved Blue Shield's expansion into hospitalization last May. However, widespread advertising and marketing of the new coverage were held up pending meetings between Blue Shield and Blue Cross to discuss resumption of some type of joint selling arrangement.

No official agreement was reached, though the two plans have continued to sell jointly in some cases.

The two health care organizations separated in late 1959 after 12 years of combined operation. A reported cause of the separation was opposition by Blue Cross to Blue Shield's addition of coverage for X-ray and laboratory services provided by physicians on an out-patient basis.

"Blue Shield is now the only Minnesota organization offering both medical and hospital protection through a non-profit, community service organization," Dr. Richard R. Cranmer, Blue Shield executive director, said.

"Among other things," he said, "the new hospital program will fill the need for low cost coverage for persons 65 years of age and over."

The hospital rider will offer an unusually wide range of coverage with daily room allowances of $10, $12, $15, $18, $20 and $25 a day covering periods of 30, 70, 120, 180, 360, 730 days of hospital care.

Benefits for all additional hospital services will be paid at 15 or 20 times the daily room rate, depending on the type of coverage selected.

Monthly rates will vary according to the benefits selected. As an example, however, family coverage providing a daily room allowance of $20 per day for a period of 180 days will be available at a monthly rate of $14.95.

Blue Shield's hospital coverage will be available only as part of the medical-surgical-maternity contract.

MINNESOTA BLUE SHIELD

An Expanding Service

Blue Shield's medical care coverage has continually been expanded to keep pace with the advances of medical science. Recently, Minnesota Blue Shield has . . .

. . . added benefits for x-ray and laboratory services necessary to the diagnosis or treatment of an illness or injury, whether performed in the doctor's office, the patient's home, or the out-patient department of a hospital . . .

. . . included allowances for such advanced techniques as electroshock treatments, open-heart surgical procedures, and cobalt and isotope therapy.

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Conference Headquarters — Roosevelt Hotel

March 12, 13, 14, 15, 1962

GUEST SPEAKERS

E. M. Pepper, M. D., New York, N. Y.—*Anesthesiology*
Edward P. Cawley, M. D., Charlottesville, Va.—*Dermatology*
Julian M. Ruffin, M. D., Durham, N. C.—*Gastroenterology*
Carroll L. Witten, M. D., Louisville, Ky.—*General Practice*
Howard J. Jones, Jr., M. D., Baltimore, Md.—*Gynecology*
Thomas M. Durant, M. D., Philadelphia, Pa.—*Internal Medicine*
Maxwell M. Wintrobe, M. D., Salt Lake City, Utah—*Internal Med.*
Bernard J. Alpers, M. D., Philadelphia, Pa.—*Neurology*
Ralph C. Benson, M. D., Portland, Ore.—*Obstetrics*
Victor A. Byrnes, M. D., St. Petersburg, Fla.—*Ophthalmology*
John H. Moe, M. D., Minneapolis, Minn.—*Orthopedic Surgery*
Albert C. Furstenberg, M. D., Ann Arbor, Mich.—*Otolaryngology*
Jeff Minckler, M. D., Denver, Colo.—*Pathology*
Lewis L. Coriell, M. D., Camden, N. J.—*Pediatrics*
Robert D. Moreton, M. D., Fort Worth, Texas—*Radiology*
John H. Mulholland, M. D., New York, N. Y.—*Surgery*
Owen H. Wangensteen, M. D., Minneapolis, Minn.—*Surgery*
John L. Emmett, M. D., Rochester, Minn.—*Urology*

SPECIAL WEDNESDAY NIGHT GUEST

Lectures, symposia, clinicopathologic conferences, round-table luncheons, medical motion pictures, technical exhibits, and entertainment for visiting wives.

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Leaving March 16 via air and returning April 6, 1962 (Optional extensions may be arranged)

For information concerning the Assembly meeting and the tour write Secretary, Room 105, 1430 Tulane Ave., New Orleans 12, La.

Meetings and Announcements

NOVEMBER

American Medical Association Clinical Meeting, Denver, November 26-30. Dr. F. J. L. Blasingame, 535 N. Dearborn, Chicago 10, Executive Vice President.

American Psychiatric Association, Hotel Schroeder, Milwaukee, Wisconsin, November 16-18. Miss Joan D. McGucken, 756 North, Milwaukee 2, Wisconsin, Administrative Assistant.

The American College of Obstetricians and Gynecologists, November 16-18, Louisville, Kentucky. For further information write: Mrs. Ruth Sutton, Information Counsel, 79 West Monroe Street, Chicago 3.

JANUARY-1962

International Medical Assembly of Southwest Texas will hold its 26th Annual Session in San Antonio, Texas, January 29-31, 1962 at the Granada Hotel. Contact: S. E. Cockrell, Exec. Secretary.

The International Medical Congress and the University of Southern California will hold its First Inter-American Conference on Congenital Defects at the Statler Hotel, Los Angeles, January 22-24. Contact: Stanley E. Henwood, IMC-New York.

Ramsey County Medical Society and the Ramsey County Chapter of the American Academy of General Practice will sponsor a medical symposium, Lowry Hotel, January 8. Contact: Dr. William Watson, 261 Midway Medical Arts, St. Paul.

American College of Surgeons Meeting, January 29, 30, 31, February 1. The Statler-Hilton and The Biltmore Hotels, Los Angeles. Contact: American College of Surgeons, Chicago.

FEBRUARY

International Medical Legal Society Seminar in Honolulu, Hawaii, February 17-24. Contact: Wm. P. Hauser, M. D., IMLS, Tacoma, Washington.

ANNOUNCEMENTS

Medical Continuation Courses to be presented at the Center for Continuation Study, University of Minnesota:

Ophthalmology (Refraction) for General Physicians November 15-27... Orthopedics for Orthopedic Surgeons and General Physicians November 16-18...Intermediate Electrocardiography for General Physicians and Specialists January 2-6...Pediatric Neurology February 12-14... Anesthesia for Specialists March 5-7...Treatment of Traumatic Injuries March 16-17.

* * *

Deadline for applications for students, interns and residents to have scientific exhibits shown at convention of Student American Medical Association, May 9-13, in Washington, D.C. File applications with SAMA Headquarters, 430 No. Michigan, Chicago.

Former students of George E. Fahr, Professor Emeritus at the University of Minnesota are arranging a celebration January 27 in honor of his 80th birthday. Festivities are open to medical public. Contact: Dr. Arthur Kerkhof, 78 South 9th, Minneapolis.

* * *

Scholarship courses in rehabilitation nursing will be conducted at Kenny Rehabilitation Institute, Minneapolis: January 15-February 2; March 5-23; April 23-May 11; June 11-29; July 30-August 17; September 10-28; October 22-November 9; November 26-December 14.

* * *

American Diabetes Association will hold Postgraduate Course "Diabetes in Review" January 17, 18, 19 in Detroit and Ann Arbor. Write: American Diabetes Association, New York.

* * *

The American Thoracic Society invites submission of abstracts of papers relating to field of tuberculosis and other respiratory diseases for presentation at its 57th Annual Meeting in Miami Beach, Florida, May 20-23, 1962. Abstracts must be in hands of committee not later than January 5, 1962. Contact: Asher Marks, M. D., American Thoracic Society, 1790 Broadway, New Work.

* * *

The American Thyroid Association again offers the Van Meter Prize Award of $500 which will be made at the annual meeting of the association in New Orleans, Louisiana, May 9-12, 1962. Essays should be sent to Theodore Winship, M.D., 430 N. Michigan Avenue, Chicago not later than January 1, 1962.

* * *

Next scheduled examination (Part 1) written of American Board of Obstetrics and Gynecology will be held in various cities on Friday, January 5. Current bulletins may be obtained from Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland, Ohio.

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*Journal of AMA, Vol. 169, No. 1, pp. 41/109

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In Memoriam

CLIFFORD T. MC ENANEY

Dr. Clifford T. McEnaney, 60, died October 5, at his home after several years' illness.

He was born in Waucoma, Iowa, and graduated from the St. Louis University School of Medicine. He began his practice in North St. Paul and moved to Owatonna in 1931. Dr. McEnaney retired in 1957 because of ill health.

Dr. McEnaney was a member of the Steele County Medical Society, Minnesota State Medical Association, and American Medical Association. He was a member of the Knights of Columbus and American Legion, and served in the U.S. Air Force during World War II.

He is survived by his wife, one son and three daughters.

RAYMOND J. GULLY

Dr. Raymond J. Gully, superintendent of the state school and colony for epilepsy at Cambridge, Minnesota, died September 25, after a brief illness.

Dr. Gully, 59, had also been a psychiatrist on the staff of the Fort Meade Veterans' hospital at Sturgis, South Dakota since 1956. Prior to that he was a staff physician at St. Peter state hospital. He graduated from the Creighton medical school in Omaha and was a member of the East Central County Medical Society. Dr. Gully was a member of the Minnesota State Medical Association before moving to South Dakota.

He is survived by his wife and three daughters.

GORDON R. KAMMAN

Dr. Gordon R. Kamman, 63, prominent neuropsychiatrist, died September 25, after an illness of several weeks.

Dr. Kamman was graduated from the University of Minnesota and his post graduate work was done in London, Zurich and Vienna and at Harvard medical school. He was a member of the staffs of Charles T. Miller, St. Luke's, St. John's, St. Joseph's Mounds Park and Midway hospitals.

Dr. Kamman was formerly deputy commissioner of mental health for the state, chairman of the advisory committee on the bureau for the feeble-minded and epileptics, psychiatric consultant for the state prison and chief of the neuropsychiatric service at Ancker hospital.

He was a fellow of the American College of Physicians, a member of the American Board of Psychiatry and a diplomat of the American Board of Psychiatry and Neurology. He was a member of the Ramsey County Medical Society, the Minnesota State Medical Association, the American Medical Association, the American Psychiatric Association, American College of Physicians, Central Neuropsychiatric Association, American Association of Biological Psychiatry, American Academy of Forensic Sciences, Minnesota Academy of Medicine, and the American Board of Legal Medicine.

He is survived by his wife and son and daughter.

FREDERICK H. K. SCHAAF

Dr. Frederick H. K. Schaaf, 72, died at his home September 8 after several years of poor health.

Born in Germany, Dr. Schaaf came to the United States in 1910 and practiced general medicine in Hartland, Minnesota, before coming to Minneapolis. He became a member of the faculty of the department of medicine at the University of Minnesota in 1917 and was a professor when he retired from the faculty in 1958.

He studied medicine at the University of Giesen, Germany, University of Berlin, and University of Munich. Dr. Schaaf was a member of the Hennepin County Medical Society, Minnesota State Medical Association, and American Medical Association, and a member and past president of the Minnesota Society of Internal Medicine and the Minnesota Academy of Medicine. He was on the corporate board of the Minnesota Heart Association, and a staff member at Abbott and Northwestern Hospitals.

Dr. Schaaf is survived by his wife.

IRVINE MC QUARRIE

Dr. Irvine McQuarrie, 70, retired head of the pediatrics department of the University of Minnesota's school of medicine, died September 9.

Dr. McQuarrie received his Ph.D. in experimental pathology and biochemistry at the University of California and entered Johns Hopkins medical school in Baltimore. He took his internship at Henry Ford hospital in Detroit, Michigan, and in 1923 became head of the hospital's endocrinology and metabolism department. In 1930 he came to Minneapolis as professor and head of the department of pediatrics at the University of Minnesota, a position he held for 25 years.

He was president of the American Pediatric Society, co-founder of the Society for Pediatric Research and the American Academy of Pediatrics. He was a member of 17 other American societies and an honorary member of 10 foreign societies. In 1954 he received an achievement award for pediatric education and metabolic research, and in 1958 received the John Howland award.

Dr. McQuarrie was a member of the American Pediatric Society, American Academy of Pediatrics, American Society for Clinical Investigation, American Society for Experimental Pathology, Hennepin County Medical Society, Minnesota State Medical Association, and American Medical Association.

He is survived by his wife and three daughters.

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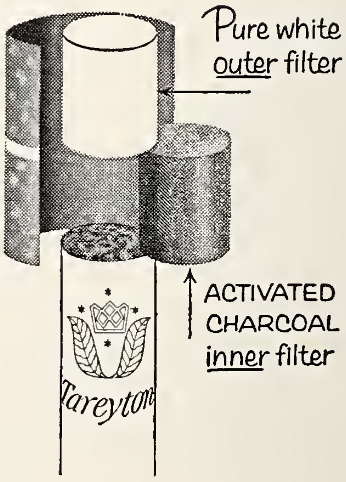
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Physician's Diary

Doctors Neil R. Kippen of Breckenridge, **Vane P. George, Jr.,** of LeSueur, **Ronald W. Taintor** of Marshall, **Lyle A. French, Donald M. Larson, Charles A. Neumeister,** all of Minneapolis, **Patrick J. Kelly, Frederick W. L. Kerr** of Rochester, **John A. Culligan, Donald W. Hannon, Rupert M. Jastram, Darrell E. Westover** of St. Paul, **Donald E. Wohlrabe** of Springfield, and **Whitney Woodruff** of Virginia were inducted as new Fellows of the American College of Surgeons at the recent Clinical Congress.

* * *

Dr. John Gridley of Arlington spent a few weeks in Honduras administering modern medical practices to these people.

* * *

Doctors B. A. Kolp, G. E. Lee, R. D. Letson, R. R. Frear, P. A. Swedenburg, E A Eberlin, Alan Zemple and **F. D. Bucher,** all members of the West Central Medical Society, strongly urged the using of safety belts in a joint letter to the editor of the Pope County Tribune Glenwood.

* * *

Doctors Lowel Smythe, John Mathiers, George Stahl, Tracy Barber, and **Dr. C. L. Oppegaard,** president of the Minnesota State Medical Association and **Dr. Charles Sheppard,** Hutchinson, president of the Southern Minnesota Medical Association spoke at the Annual Meeting of the Southern Minnesota Medical Association recently held in Austin.

* * *

Dr. Gershom J. Thompson, head of the Section of Urology of the Mayo Clinic, left Rochester to act as coordinator of medical activities for the world post-graduate clinic tour of the International College of Surgeons.

* * *

Dr. J. F. Schaefer of Owatonna together with **Doctors John Arnesen** and **A. J. Olson** attended the recently scheduled Southern Minnesota Medical Association meeting.

* * *

Doctors Robert R. Wright and William J. O'Rourke of Austin attended the Minnesota Academy of General Practice meeting held recently in Minneapolis. **Doctor S. T. Normann** of Waseca also attended this meeting.

* * *

Doctors Melvin Sinykin and **Arthur Kerkhoff** of Minneapolis and **Doctor Zondal Miller** of St. Paul spoke at the education seminars for physicians, nurses and dentists held in Hutchinson in October.

* * *

The Mayo Clinic has appointed **Doctors Roger D. Kempers, George B. Malkasian, Murray N. Silverstein, Donald A. Sones** and **Jack L. Titus** to the staff of the clinic.

Doctor Arthur E. David, Jr., of St. Cloud, **Dr. Bruce Williams** of Duluth, **Dr. Dean S. Flemming** of Minneapolis, **Dr. D. L. Jacobs** of Willmar, **Dr. John K. Meinert** of Willmar, **Dr. L. W. Carlander** of Minneapolis, **Dr. Jack Guy** of New London, **Dr. A. M. McCarthy** of Willmar, **Dr. William Atmore** of Duluth and **Dr. L. J. Opsahl** of Willmar all took part in the program highlighting the Northern Minnesota Medical Association Convention in Willmar during September.

* * *

Dr. W. C. Kaufman of Appleton was recently honored for 50 years of service to his community.

* * *

Dr. A. L. Lindberg is in semi-retirement after 37 years of medical practice in Wheaton; however, he will continue to check eyes by appointment at his home.

* * *

Dr. Russell O. Sather of Crookston has been elected to a four-year term on the board of trustees of the Minnesota Medical Foundation.

* * *

Doctor D. Thane Cody of the Mayo Clinic recently attended the meeting of the British Physiologic Society in New-castle-on-Tyne, England.

* * *

Dr. C. G. Ochsner of Wabasha recently left the Community Clinic there to join the Veterans Administration staff at Fort Snelling. **Dr. Johannes L. Leonhardt** of Rochester will replace **Dr. Ochsner.**

* * *

Dr. Marguerite Schwyzer of St. Paul addressed the Sacred Heart Parent-Teachers meeting in Renville in October.

* * *

Dr. F. H. Buck of Shakopee was honored for 50 years of service.

* * *

Dr. N. M. Mensheha spoke at the Farm Bureau banquet in Lanesboro recently. Dr. Mensheha is attending post-graduate school at the University of Minnesota.

* * *

Dr. Frank H. Krusen, president of the Sister Elizabeth Kenny Foundation and president of the State Board of Health, spoke at the Winona Council of Social Agencies.

* * *

Dr. Frederic L. Mast of Adams Clinic, Chisholm, attended the annual meeting of the Minnesota Academy of General Practice. **Dr. E. J. Tanquist** of Alexandria and **Dr. James Cosgriff, Jr.,** of Olivia, also attended this meeting. The doctors from LeSueur, **Dr. J. E. Anderson** and **Dr. Dale A. Bergeron,** also were present and Hector was represented by **Doctor C. A. Anderson. Drs. R. T. Petersen** and **William A. Autrey,** St. Cloud, also attended.

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Doctors T. S. McClanahan, T. Briggs, C. B. Cedarleaf, D. Dahl, M. Witthaus, R. Peterson, O. Enroth, M. Lane, R. W. Reif and **T. Milroy** of White Bear Lake have been meeting in an attempt to solve some of the problems associated with lake pollution.

* * *

Dr. E. C. Goblirsch of Sleepy Eye has been appointed a member of Gov. E. L. Andersen's liaison committee organized to minimize differences of opinion between the doctors of medicine and osteopathy.

* * *

Dr. G. R. Diessner, Rochester, was elected president of the Southern Minnesota Medical Association. **Dr. Edward J. Richardson,** St. Paul, was elected first vice president; **Dr. John J. Eustermann,** Mankato, secretary-treasurer, and **Dr. Edward J. Richardson,** St Paul, first vice president.

* * *

Dr. William B. Stromme, Minneapolis, recently attended the Third World Congress of Gynecology and Obstetrics held in Vienna.

* * *

Dr. Lloyd MacLean, chief of department of surgery at Ancker Hospital, Minneapolis, spoke at the meeting of the St. Paul Surgical Society.

* * *

Dr. Ejvind P. Fenger, associate medical director of Glen Lake sanatorium, was recently appointed new state director of tuberculosis services.

* * *

Dr. Vera Behrendt was appointed medical director of the Willmar State Hospital in September.

* * *

Dr. Carl Christenson of the Clinton Clinic attended a medical seminar at Willmar.

* * *

Dr. Cecil J. Watson, received the Distinguished Service Award of the Minnesota Medical Foundation at recent ceremonies in the Mayo Memorial Auditorium at the University of Minnesota. The new trustees were also announced as follows: **Dr. Karl W. Anderson,** of Minneapolis, **Dr. Vernon D. E. Smith** of St. Paul, **Dr. Russell O. Sather** of Crookston, **Dr. John Moyer** of Duluth and **Dr. Herman E. Drill,** of Hopkins.

* * *

Brown & Day, Inc., a well-known surgical supply house in St. Paul, has been acquisitioned by Medical Investment Corporation (**Medicor**).

* * *

Dr. R. W. Merrill of Morris also attended the annual meeting of the Minnesota Academy of General Practice in Minneapolis.

Dr. Walter E. Hinz of the Lakeland Medical Center attended an obstetrics course for specialists at the University of Minnesota. **Dr. Lloyd Gilman,** an associate of the center, attended a meeting of the American College of Surgeons in Chicago. **Dr. Mansur Taufic** of Austin attended this same meeting.

* * *

Dr. A. B. Baker, professor and Director of Neurology, University of Minnesota Medical School, gave a talk on "Epilepsy. Facts and Fiction" at the recent meeting in Mankato of the Minnesota Epilepsy League.

* * *

Dr. Olaf Lukk of Prior Lake attended the fall refresher of the Minnesota Academy of General Practice held in Minneapolis recently. **Dr. Sam McHutchinson** of Winona was elected to the position of chairman of the Rules Committee at this meeting.

* * *

Dr. Harold O. Perry, consultant in diseases of the skin at the Mayo Clinic, was awarded the bronze medal for the best report of a case at the annual meeting of the Southern Minnesota Medical Association.

* * *

Dr. John R. Flatt of Wabasha was among many of the physicians attending the meeting of the Minnesota Academy of General Practice in Minneapolis.

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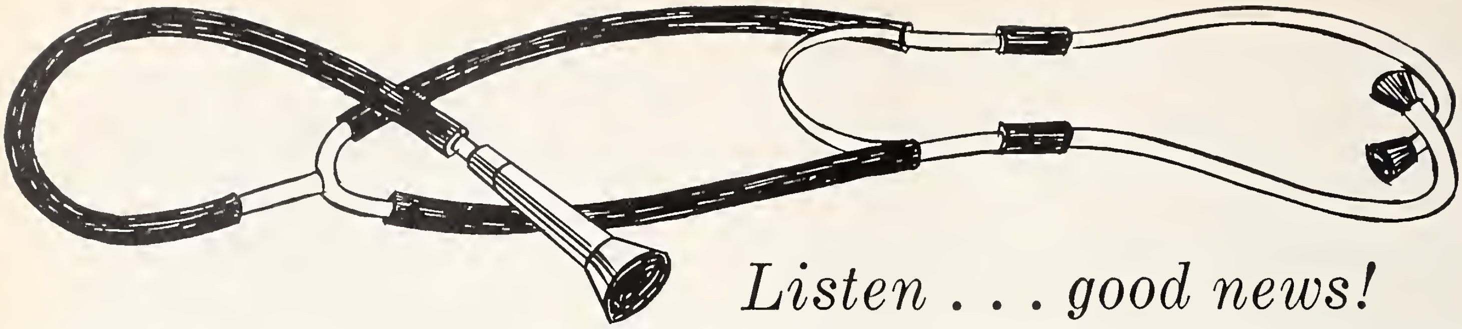

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Superintendent
Ella M. Leseman
Prescott, Wisconsin
Congress 2-5522

Dr. George B. Ewens of the East Range Clinic, Virginia, attended the meeting of the Minnesota Dermatological Society held at the Mayo Clinic. Dr. Ewens participated in the presentation of unusual clinical cases.

* * *

Dr. Alex Abrams, St. Paul attended the recent meeting of the AMA in New York.

* * *

Dr. Charles Mayo of Rochester recently received the Golden Plate Award at the first annual Banquet of the Golden Plate in Monterey, California. The award was given by the Academy of Achievement to recognize Americans who have made noted contributions in their respective fields.

* * *

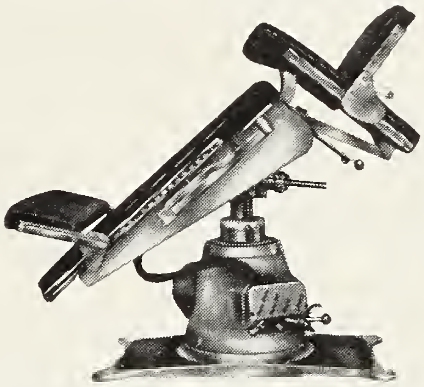
Drs. R. T. Kelly, G. W. Ireland and **A. V. Grinley** of Grand Rapids and **Dr. E. K. Rowles** of Coleraine were among the doctors who attended the session of the Minnesota Academy of General Practice backing legislation requiring all new cars to be equipped with seat belts. **Drs. R. G. Gildersleeve, J. W. Bratholdt** and **D. R. Philip** of Watertown also were present at this meeting.

* * *

Gov. Andersen recently announced the appointment of **Dr. Arnold O. Swenson,** Duluth, to the State Board of Health.

* * *

Dr. Moses Barron was honored by the Hennepin County Medical Society as the doctor who has made most outstanding contributions to the practice of medicine in its area.



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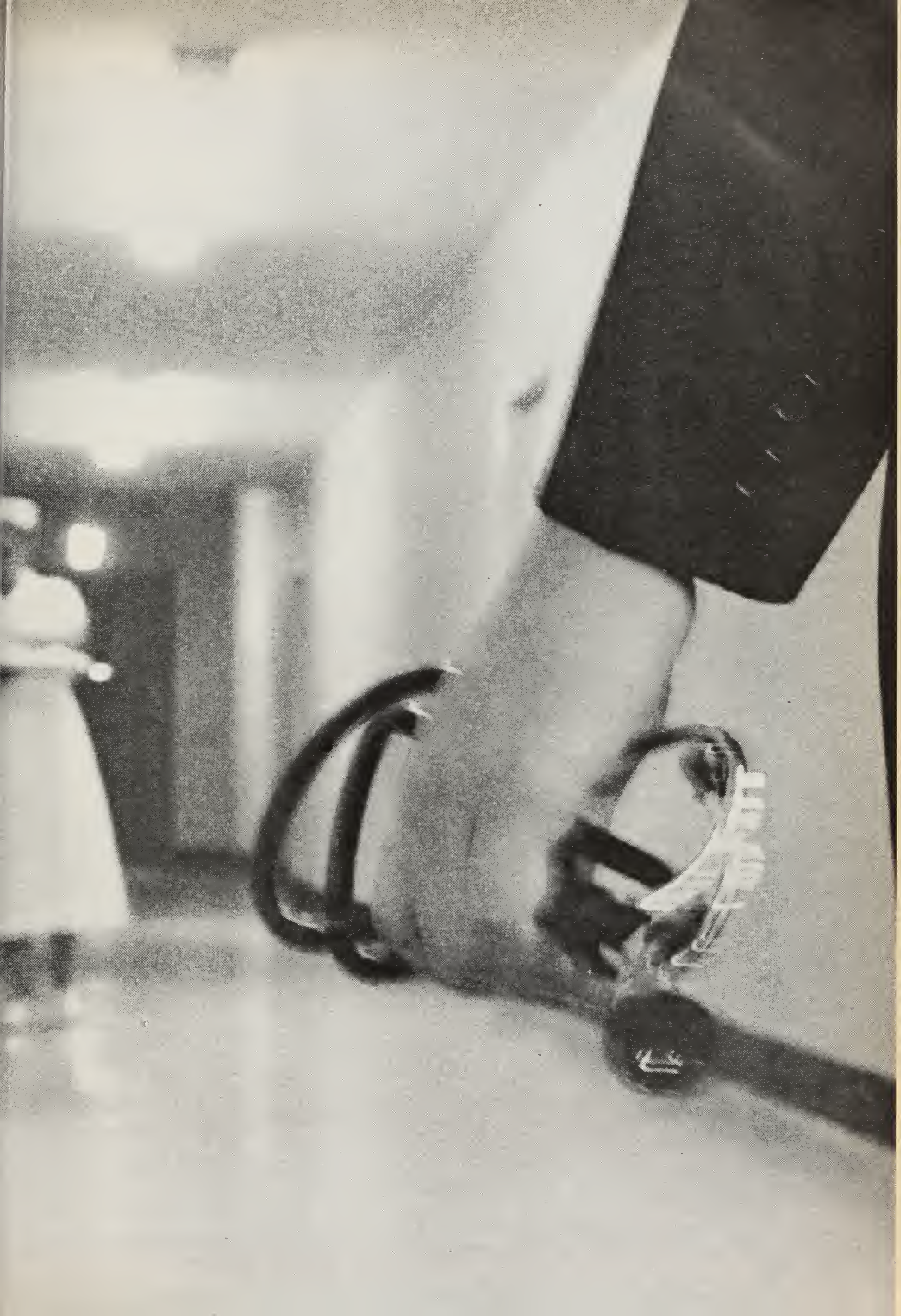

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Contents fo

SCIENTIFIC ARTICLES

ORIGINAL CONTRIBUTIONS

Hashimoto's Struma, Clinical and Surgical Aspects
Charles E. Rea, M. D. and *Elmer Paulson, M. D.*
St. Paul, Minnesota.......503

Gastrointestinal Masking of Grave's Disease
Donald Woodley, M. D., Minneapolis, Minnesota.......505

Primary Hyperparathyroidism
Neil R. Thomford, M. D., Omar A. Tveten, M. D. and
M. M. Sarnecki, M. D., Minneapolis, Minnesota and
Stanley V. Lofsness, M. D., St. Paul, Minnesota.......510

Thyroglossal Cysts and Sinuses in Children, Results of the Sistrunk Operation
Paul M. Brown, M. D., and *Edward S. Judd, M. D.*
Rochester, Minnesota.......516

Hay-Fever Pollens of Southeastern Minnesota
Lowell L. Henderson, M. D., Rochester, Minnesota.......522

Calming the Irritable Infant with a Simple Tonal Device
Jay R. Olsen, M. D., and *Edward N. Nelson, M. D.*
Minneapolis, Minnesota.......527

Malaria Is under Attack around the World
Mary E. Hamlin, B. A., Minneapolis, Minnesota.......530

1961 Income Tax Guide for Physicians
John S. Hibbs, LL.B.......534

ABSTRACTS AND BRIEFS.......547

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Minneapolis Academy of Medicine
Minneapolis Obstet. and Gynecol. Soc.
Minneapolis Surgical Society
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Medicine

December, 1961

Volume 44

Number 12

MISCELLANEOUS ARTICLES

EDITORIALS

Some Notes on the Present Status of Minnesota Obstetrics and Gynecology
John L. McKelvey, M. D. 550

Tattoos — Their Value
Eugene M. Townley 554

Should We Nibble?
Carl O. Rice, M. D. 554

THE ART OF MEDICINE 555

PRESIDENT'S LETTER 549

BLUE SHIELD A-31

MEETINGS AND ANNOUNCEMENTS A-33

IN MEMORIAM A-39

PHYSICIAN'S DIARY A-41

CLASSIFIED ADVERTISING A-44

INDEX TO ADVERTISERS A-45

Minn. Society of Internal Medicine
Minn. Society of Neurol. & Psych.
Minn. State Med. Association
Minnesota Surgical Society

Minnesota Thoracic Society
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Clinical and Surgical Aspects

Hashimoto's Struma

Irradiation Therapy

CHARLES E. REA, M.D.
ELMER PAULSON, M.D.
St. Paul, Minnesota

HASHIMOTO'S DISEASE, or struma lymphomatosa, was first described by Hashimoto in 1912. It is a chronic disease of the thyroid in which the parenchyma is largely replaced by a lymphocytic infiltration. Recently it has been shown that these patients develop antibodies to their own thyroglobulin and the lymphocytic infiltration is thought to represent the tissue reaction to an antibody-antigen reaction within the thyroid itself. The disease is much more common in women and can occur at any age. Given a woman in her post-menopausal age group with a rather firm, enlarged, rubbery gland with progressive signs of hypothyroidism, one must think of Hashimoto's disease. The thyroid has a distinctive firm lobular configuration. It is not tender. Almost always there is thickening of the pyramidal lobe. The usual diagnostic tests for thyroid function may be within normal limits. The radioactive iodine uptake test is not specific. It may be slightly elevated. Analysis of the protein-bound iodine of the serum often discloses that a significant fraction is thyroglobulin.

In the differential diagnosis one must consider other forms of thyroiditis, and carcinoma of the thyroid. Sub-acute thyroiditis is an inflammation of the thyroid, the result of a virus

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Presented before the Minnesota Surgical Society, St. Paul, Minnesota, November 4, 1960.

infection. It runs a course like most virus disease, causes no permanent damage to the thyroid, is well controlled by cortisone but is not helped by antibiotics. Clinically carcinoma of the thyroid may be confused with Hashimoto's struma. An infiltrating papillary carcinoma is associated with Hashimoto's struma more often than is generally believed.

The absolute diagnosis of Hashimoto's struma is the biopsy of the thyroid gland. We do not have any large experience using the Silverman needle in biopsying cases of Hashimoto's struma. We prefer to expose the thyroid and take a biopsy. If there should be any carcinoma present, there is potential spreading of the cancer through a needle tract as in an open operation, so the question of which is better is quantitative and rather empirical. We do not do smears but give the pathologist the piece of tissue with the architecture well preserved. The pathologist can usually give the diagnosis on frozen section.

As far as treatment is concerned, early cases in which the thyroid is not greatly enlarged respond to full doses of dessicated thyroid. Surgical treatment of thyroiditis is not necessary except for pressure symptoms or where the goiter is cosmetically unacceptable. If at operation we have confirmed the diagnosis of Hashimoto's struma by biopsy we do not do a thyroidectomy unless there are pressure symptoms. In our experience, Hashimoto's struma does not cause pressure symptoms, in the majority of cases. If the diagnosis of Hashimoto's struma is verified by biopsy we prefer to close the wound and then give the patient x-ray therapy. In our series, we can get a decrease in the size of the gland and a better controlled hypothyroidism using radiation than we can by a total thyroidectomy.

Afterwards, these patients have to have thyroid extract to control their hypothyroidism and, on occasion, have to have a repeat course of x-ray therapy because of enlargement of the gland.

We have treated ten patients, to date, in this manner. We have been most satisfied with the results. In six patients in which the diagnosis was confirmed by biopsy, one course of x-ray therapy adequately reduced the size of the gland and no further treatment has been necessary over a period of three years. Two patients have had to have subsequent radiation to the neck. Two other patients were explored because of the fear of an associated malignancy. Fortunately, malignancy was not found at the second operation.

Since the basic pathology of Hashimoto's struma is intense lymphocytic infiltration with formation of organized lymphoid follicles, therapy is designed to eliminate or, at least, reduce this feature. Roentgen radiation is an efficient lymphocytolytic agent. In the case of subacute thyroiditis only 2 or 3 small doses of radiation are needed. However, in Hashimoto's struma considerably more radiation is necessary. Probably this is because mature lymphoid follicles prevail in the Hashimoto type in contrast to the diffuse lymphocytic infiltration of subacute thyroiditis.

Radiologists differ in their interpretation of optimal dosage for Hashimoto's disease. Most of the patients in this series received 1200 r/air, 2.2 mm Cu HVL, divided into 4 doses in a week's time. If resolution was not satisfactory after 6 weeks, this schedule was repeated.

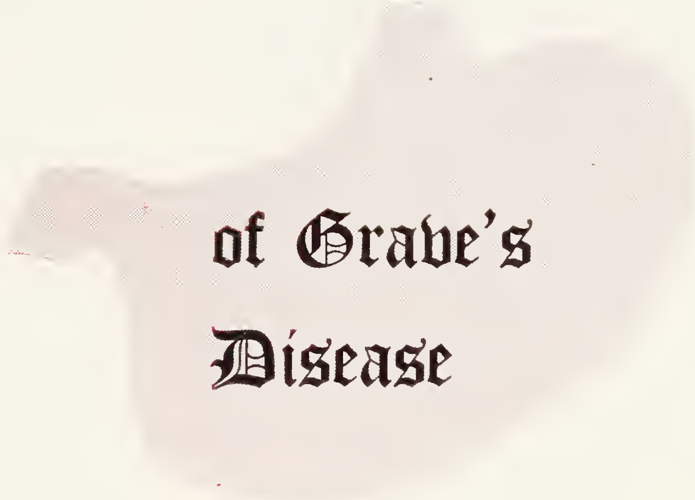
Success is characterized by reduction of thyroid size, elimination of induration, disappearance of dysphagia and hoarseness. It is assumed that these patients will be hypothyroid the remainder of their lives. It is good practice to reevaluate this feature after an interval of months or years. At present, we are checking the radioactive iodine uptake of the thyroid after irradiation therapy for Hashimoto's Struma. To date, the uptake has been low. These patients have to be maintained on thyroid extract.

Summary

The diagnosis of Hashimoto's Struma must be verified by biopsy, and surgical exploration rather than needle biopsy is recommended. The authors prefer to treat these patients by irradiation therapy rather than thyroidectomy. In our series, we obtained a decrease in the size of the gland with a better controlled hypothyroidism using irradiation than by surgery.

Heaven's help is better than early rising.—*Cervantes*

Gastrointestinal Masking of Grave's Disease



DONALD WOODLEY, M. D.
Minneapolis, Minnesota

DESPITE CONSIDERABLE recent advances in the laboratory aid to the diagnosis of hyperthyroidism, this diagnosis continues to be delayed and frequently missed. Several reasons account for this now, but it is probably mainly due to failure to think of it as a diagnostic possibility in cases which do not present the classical signs and symptoms. Where most of the classical features are missing, or where the prominence of symptoms in a single system overshadows all else, the diagnosis is often more difficult. Also, a failure to recognize that the patient need not be hyperkinetic and may even be apathetic often delays the final outcome.[1] The most difficult thing to reconcile, however, is the frequency with which the diagnosis is delayed and even missed in the presence of an obvious goiter. Recently two cases were seen at the Ancker (City and County) Hospital of St. Paul. These two cases displayed very atypical manifestations of hyperthyroidism. They were seen at essentially the same time at the hospital and presented a very puzzling differential diagnosis to the ward staff and consultants. After long study and observation along a very circuitous diagnostic route, both cases eventually proved to have Grave's disease with unusual signs and symptoms predominantly suggesting intrinsic gastrointestinal disease.

From the Medical Service, Veterans Administration Hospital, and the Department of Medicine, University of Minnesota. Resident in Medicine.

Case Reports

Case 1. This 43-year-old white female had noted the onset of rheumatoid arthritis at the age of 19 and diabetes mellitus at the age of 23. She also had carcinoma of the cervix treated in 1956 by radiation. In the last five years the patient had received three courses of prednisone, each lasting about 1 to 1½ years. She was tapered off each time due to difficulties in controlling her diabetes. The most recent of these courses was in May, 1959. She did fairly well while being treated with aspirin and physiotherapy and was discharged on May 27, 1959. The patient at this time had evidence of hypercortisonism with moon facies. She began noticing anorexia, nausea, vomiting, constipation, weakness, trembling, and increased joint pains about the time of her discharge. These symptoms increased in severity till she was readmitted on June 21, 1959.

Examination revealed a thin, moon-faced female with multiple moderately severe joint deformities of rheumatoid arthritis. There was no evidence of active acute inflammation, however. Her blood pressure was 120/65, and a pulse of 110 was noted. The fundi showed moderately severe diabetic retinopathy. The thyroid was enlarged to 2-3 times normal size. It was symmetrical and no nodules or bruit were noted. The spleen was palpable but this had been noted for five years previously. Pelvic examination revealed no evidence of recurrent carcinoma. Laboratory data showed a hemoglobin of 10 grams per 100 ml., a white-cell count of 6,450, with 58 per cent neutrophils, 38 percent lymphocytes, 2 percent eosinophils and 2 percent monocytes. The red cell indices were hypochromic macrocytic. The blood urea nitrogen, serum electrolytes, serum proteins, A/G ratio, liver function tests, alkaline phosphatase, serum bilirubin, calcium and phosphorus were all normal. Several clot tests for L.E. cells, tests for occult blood in the feces (guaiac), Coombs test, and fecal urobilinogen were all negative or normal also. A serum cholesterol was 119mg. and 156mg. per 100 ml. on two determinations. Electrocardiogram showed only a sinus tachycardia. X-ray examinations of the esophagus, stomach, and duodenum twice and the small bowel once were normal. A plain x-ray of the abdomen showed two large gall stones. The bone marrow examination was nondiagnostic.

The patient's course in the hospital was marked by her persistent vomiting and consequent weight loss. Drug toxicity was suspected and her various medications were manipulated or stopped with no particular effect. A surgical consultant did not think that her cholelithiasis explained the symptoms. Her white-cell count dropped as low as 3,400 with 41 percent neutrophils. A course of oral then intramuscular iron resulted in no hemoglobin rise. The control of her diabetes was erratic; however, she did not have insulin reactions. No other evidence for a brain tumor aside from the vomiting was noted. Other upper gastrointestinal pathology such as ulcers or carcinoma was ruled out by the negative x-ray series. Addison's disease was considered but an intravenous ACTH test gave a normal response.

About this time, the possibility of Grave's disease was given more serious thought. A protein-bound iodine was noted to be 9.0 micrograms per 100 ml. Further family history then revealed that two sisters and the mother of the patient at one time or another had hyperthyroidism. The patient had had her goiter since childhood and had noted no particular change in it recently. She had had an intravenous pyelogram on May 6, 1959 but no other x-rays since that time and no iodine containing medications. A 24-hour I^{131} uptake was done next and was 65 per cent. Her BMR was +30 percent. A previous BMR in 1956 was -14 percent. Her weight had dropped from an admission 105 pounds as low as 87 pounds. She was given two blood transfusions and phenobarbital with no apparent effect in her clinical course.

At this time it was felt that the patient did indeed have Grave's disease and treatment was begun with propylthiouracil 100 mg. q. 6 h. on August 24, 1959. This was continued until September 12, 1959. She responded rather dramatically with a slowing of her pulse, increase in her appetite, and cessation of the vomiting. In two weeks she gained 10 pounds in weight and her goiter decreased in size. On September 17, 1959, after four days off the propylthiouracil, she was given I^{131} in a dose of 5.0 millicuries. Thyroid function studies were repeated just prior to administering the I^{131} and revealed a protein-bound iodine of 4.5 micrograms per 100 ml., BMR of +8 percent, and serum cholesterol of 218 mg per 100 ml. The I^{131} uptake was 72 percent. The patient's symptoms began to recur after cessation of the propylthiouracil and necessitated restarting it to control her nausea and vomiting. She continued to improve, but she did not become euthyroid on the first dose of I^{131}. When restudied in December, an I^{131} uptake was 77 percent with a protein-bound iodine of 5.4 micrograms per 100 ml. She was retreated with 3.0 millicuries of I^{131} on December 30, 1959.

Case 2. This 49-year-old Negro lady was admitted to Ancker Hospital on August 6, 1959. She related a very complex history of considerable organic and psychic pathology. Her current symptoms began with sharp intermittent pleuritic chest pains about three days before admission. These occurred several times each day but were not associated with exertion, coughing, or fever. Shortly after the onset of the pains, the patient noted swelling of the legs and abdomen and then a persistent dull ache in the entire right side of her abdomen. She had no nausea, vomiting, lower bowel symptoms, or urinary symptoms. The patient became more dyspneic and developed orthopnea also, but the chest pains subsided by the time of admission. Past history also revealed that she had been treated for latent syphilis with heavy metal therapy in the 1940's. She had had two umbilical hernia repairs in 1945 and 1956. There was no history of her taking any drugs or having any exposure to hepatotoxic agents. There was no history of alcoholism.

She apparently had been quite well and was very obese (about 200 pounds) when she noted the onset of severe abdominal pains in December 1958. An examination at a private hospital revealed a normal upper and lower gastrointestinal series, normal bone marrow, and a probable nonfunctioning gall-bladder. The patient was mildly jaundiced at the time. An exploratory laparotomy was done with a preoperative diagnosis of a right upper quadrant mass. No specific pathology was found. However, a small section of jejunum was resected because its blood supply was compromised during the operation. This section of bowel was normal. She finally recovered after a stormy operative and postoperative course. A diagnosis of "probable porphyria" was made, but this was not substantiated by further laboratory tests, however. She lost a considerable amount of weight after the operation but then stabilized at about 128 pounds.

She was then followed at the Ancker Hospital O.P.D. for vague chest pains diagnosed as angina pectoris. An inpatient examination was done in May, 1959, revealing a normal intravenous pyelogram and gallbladder x-rays. A chest x-ray at that time showed some increase in the heart size. Electrocardiogram showed T-wave changes of ischemia. Liver function studies revealed a direct bilirubin of 0.8mg. per 100 ml. with a total of 1.3mg. per 100 ml. Total serum proteins were 7.8mg. per 100 ml. and the A/G ratio was 3.7/4.1. Thymol turbidity was 8.7u and a cephalin flocculation was 2+. Alkaline phosphatase was 12 King-Armstrong units per 100 ml. She was followed in the O.P.D. and treated with oral iron and nitroglycerin for a microcytic hypochromic anemia and angina pectoris.

Physical examination showed a well developed Negro female who displayed no evidence of her marked weight loss, but was very apprehensive and had extreme emotional lability. The blood pressure was 180/80 and the pulse was 72. Her thyroid was twice normal size, symmetrical, and without nodules. A bruit was heard by some observers. Cardiac examination revealed a normal sinus rhythm, with P2 louder than A2. There was a grade II systolic blowing murmur at the apex, and the point of maximum impulse was in the anterior axillary line and the fifth intercostal space. The lungs were clear. The abdomen revealed moderate distention and evidence of ascitic fluid. Bowel sounds were hyperactive. The liver descended 8 to 10 centimeters below the costal margin on the right in the mid-clavicular line. It was very tender. The spleen was not felt after examinations in multiple positions. There was a 1+ pitting edema extending from the feet up to the abdominal wall.

Laboratory data on the present admission revealed a hemoglobin of 10 grams per 100 ml. and a normal white-cell count. Platelets varied from 80,000 to 100,000/per cu. mm. Red cell fragility was normal. Serum bilirubin was 3.1mg. per 100 ml. direct with a total of 5.0mg. per 100 ml. Albumin was 3.1gm. per 100 ml. with a globulin of 4.8gm. per 100 ml. Thymol turbidity was 8u and a cephalin flocculation 2+. Alkaline phosphatase initially was 36 King-Armstrong units per 100 ml. and subsequently dropped to 21. Prothrombin time was 17 seconds with a control of 13. Stools were negative for blood and porphobilinogen was not found in the urine. Sickle cell preparations were negative. Three clot tests for L.E. cells were negative. Electrocardiogram showed T-wave inversions and a questionable left ventricular hypertrophy. A serum transaminase was normal. A venous pressure was 10 centimeters with an arm to tongue (Decholin) circulation time of 13 seconds. Cardiac fluoroscopy showed a generally enlarged heart. Paracentesis of the abdominal fluid was done and studies for malignant cells, acid-fast bacilli, and amylase were normal or negative. X-rays of the skull and neck were normal. A liver biopsy with the Vim-Silverman needle was obtained. However, this also proved to be entirely normal. Some atrophy without loss of strength or any neurological change was noted in the right arm. Also, it was noted that the patient had a minimal but definite stare and lid-lag. Therefore, a protein-bound iodine was drawn. However, the patient left the hospital on August 31, 1959 on a pass and failed to return.

She finally returned to the hospital on October 5, 1959 at the suggestion of the city welfare board. She had felt quite well since leaving the hospital. A private physician gave her a diuretic and she lost about 12 pounds. There was no other particular change in her picture. The protein-bound iodine drawn in August had returned as 14.0 micrograms per 100 ml. The patient now stated that her goiter had appeared about 4 or 5 years ago, but there had been no particular change in it since that time. She had not started to lose weight until her abdominal symptoms precipitated hospital admission in December, 1958. She thought that her eyes had become more prominent and also noted an excessive appetite at that time. However, she stated that she had no heat intolerance.

There was no change in the physical findings at this time. A BMR was +46 percent, a 24-hour uptake of I^{131} was 81 percent, and a repeat protein-bound iodine 13.5 micrograms per 100 ml. Bone marrow was non-diagnostic. Repeat venous pressure was 10.5cm. with an arm to tongue (Decholin) circulation time of 18 seconds. Repeat laboratory values on the other tests were essentially the same. Multiple calcium determinations ranged from 11.4 to 13.8 mg. per 100 ml. with a low normal phosphorus. A diagnosis of Grave's disease was substantiated by these tests and she was treated with 6.0 millicuries of I^{131} on October 27, 1959. She responded to this treatment with a lessening of her symptoms and marked decrease in abdominal fluid and liver size. The abnormal blood chemistries reverted to essentially normal results. Her clinical response was incomplete, however. In January, 1960, an I^{131} uptake was 83 percent and protein-bound iodine 10.6 micrograms per 100 ml. She was, therefore, retreated with another 4.0 millicuries of I^{131} on January 27, 1960.

Discussion

These two cases illustrate samples of unusual manifestations of hyperthyroidism and the delay in diagnosis which may result. There are several unusual points in each case that are worthy of calling to attention. The first patient presented with the main symptoms of anorexia, nausea, and vomiting. This was in striking contrast to the usual story of weight loss in the face of hyperorexia. Instead of the more frequent diarrhea, she also had constipation. Although she had a sinus tachycardia, the blood pressure was normal. The patient also had a palpable spleen. This is a finding present in 5 percent or less of cases of Grave's disease.[2] No other cause for the patient's anemia and neutrophilic leukopenia were found either. Both were noted to return to normal with antithyroid treatment. Williams has noted the white-cell count to be as low as 3200 per cu. mm.[3]; in this patient it was 3400 per cu. mm.

The second patient had an even more extraordinary and bizarre course. Her chest and abdominal pains were difficult to evaluate, and many possibilities had to be ruled out. Chapman and Maloof[4] reported a series of cases of hyperthyroidism with unusual manifestations. Their first case displayed a severe steady epigastric pain. Upon exploratory laparotomy, nothing abnormal was found. Later, the patient was finally cured of his symptoms by thyroidectomy for hyperthyroidism. Our second patient's most perplexing findings, though, were those of hepatomegaly, ascites, jaundice, and liver function abnormalities. It was thought, after an extensive gastrointestinal examination was non-diagnostic, that liver biopsy would settle the issue. Surprisingly enough, this was interpreted to be normal by three pathologists. Hanger has discussed the liver damage in hyperthyroidism[2] and the possible roles played by a cytotoxic action of excessive thyroid hormone plus nutritional and circulatory disturbances. Liver function tests have been reported abnormal in 45-90 percent of various series. Pathological changes ranging from none detectable through scattered fatty metamorphosis or focal necrosis even to a "thyroid cirrhosis" have been described.[5-7]

This patient's persistently normal pulse rate of 70-80/minute even in the face of a very apprehensive and emotionally labile personality also complicated matters. Her lack of heat intolerance was, of course, at variance with the usual story. The patient's myopathy of the right arm was not noted initially and it was not until even later that the significance of it was realized.[8] The unusual finding of hypercalcemia in hyperthyroidism was also seen here. Surprisingly, it occurred in this patient rather than the first one where it could well have been suspected with the severe nausea and vomiting.[2] Leg swelling was noted in this patient as it is in about one third of those with Grave's disease.[4]

Summary and Conclusions

Two cases with bizarre clinical pictures finally diagnosed as hyperthyroidism have been presented. With the widespread knowledge of the classical picture of this disease and the recent advances in laboratory diagnosis, it is probably only the case with unusual manifestations in which diagnosis is now delayed. This problem is so striking, however, that the majority of case reports in recent years have been marked with instances of delayed diagnosis of hyperthyroidism in patients with an obvious goiter. For example, in seven of eight cases in Chapman and Maloof's series[4], a definite goiter was present. Despite this the diagnosis was missed or delayed for prolonged periods of time. In two of four patients reported by McGee, Whittaker and Tullis[1] as examples of apathetic hyperthyroidism, a palpable goiter was noted early in the course, but its significance missed.

It is suggested that *any unusual* illness in a patient with a goiter immediately should suggest the possibility of hyperthyroidism to the clinician. Even though the classical syndrome is not present, relegation of this diagnosis to a higher order on the scale of possibilities will prevent this common error.

I am indebted to Drs. Edmund B. Flink, Robert R. Rossing, and Dennis J. Kane for constructive criticism and encouragement in the preparation of this paper.

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Beware the middle mind that purrs and never shows a tooth.—E. Wylie

WHAT'S YOUR DIAGNOSIS?

Female, age 64, admitted to the hospital September 25 because of crampy pain in the abdomen of a 6 day duration. She had vomited on one occasion shortly after having eaten lunch with her daughter on September 19. They thought the vomiting had arisen from some food dyscrasia because both she and her daughter had vomited.

The vomiting did not recur but she then became aware of abdominal distention. There had been no previous symptoms.

The examination indicated abdominal distention, active bowel sounds suggesting intestinal obstruction, and a large pelvic mass extending into the abdomen. The mass was fluctuant in the cul-de-sac but not tender. The abdominal portion of the mass was nodular and slightly tender.

The admission temperature was normal but during the next two days the temperature fluctuated from normal to 101°. The white count was 15,900. Polymorphonuclears-77%. Hemoglobin-14 grams. Sedimentation rate-24. BUN-35. Carbon dioxide combining power-21.8. Blood chlorides 89.5 The urine revealed 1+ albumin.

X-ray examination suggested the possibility of small bowel obstruction. Barium enema revealed a large extrinsic mass in the pelvis causing a narrowing at the mid sigmoid.

Gynecological and surgical consultations were obtained. The nodular abdominal mass and the pelvic cul-de-sac fluctuation were observed by both consultants. The patient was given Thyotepa in anticipation of a contaminating operation for malignancy.

What's Your Diagnosis?

See page 521

AGAMMAGLOBULINEMIA SYNDROME

This syndrome is characterized by constantly recurring infections of the respiratory system and almost complete absence of gamma globulin. The intra-muscular injection of human gamma globulins and the use of antibiotics provides benefit in these cases.

Robert H. Durham

There are few pains so grievous as to have seen an exceptional man miss his way and deteriorate.— Nietzche

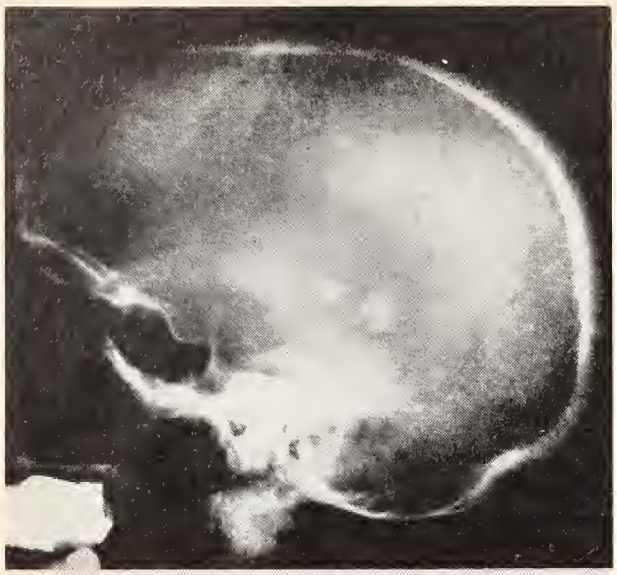

Figure 1. General demineralization of the skull.

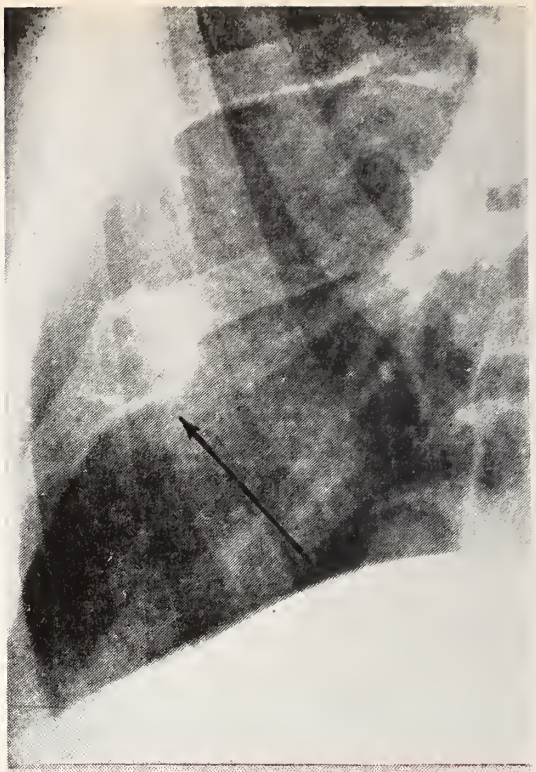

Figure 2. Cystic lesion of rib characteristic of osteitis fibrosa cystica.

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Primary

IN 1926 FELIX MANDL of Vienna first removed a parathyroid adenoma for von Recklinghausen's disease.[1] Extensive studies on the anatomy, physiology and pathology of the parathyroid glands have since resulted. The various clinical manifestations of parathyroid disease have been thoroughly investigated and vast improvement in operative technique for excision of adenomas and hyperplastic glands has been made.

The term "primary hyperparathyroidism" defines a condition whereby more parathyroid hormone is being elaborated than is needed.[2] This is not true in "secondary hyperparathyroidism" where the increased amount of hormone produced is needed for some compensatory purpose such as in vitamin D insufficiency, uremia, and pregnancy. A single adenoma, carcinoma of one of the four glands, multiple adenomata, or hypertrophy of all parathyroid tissue may produce primary hyperparathyroidism. The following is a case report of primary hyperparathyroidism due to a solitary adenoma of unusually large size.

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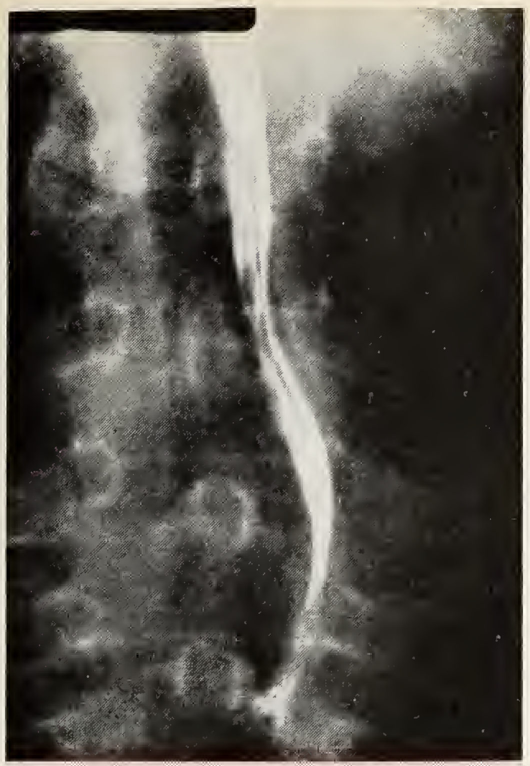

Figure 3. Deviation of esophagus due to unusually large parathyroid adenoma.

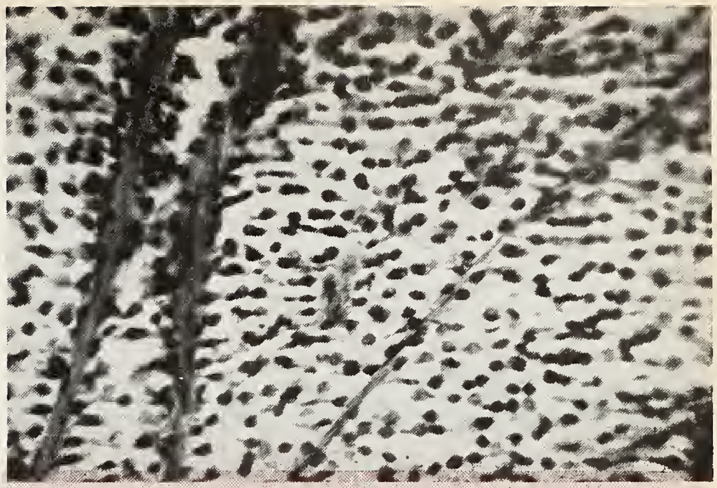

Figure 4. Closely packed, relatively small cells typical of parathyroid adenomata.

Hyperparathyroidism

Case Report

A 62 year old white male was first examined in July, 1959 following an episode of syncope during which he fell sustaining a laceration of the forehead. X-rays of the skull revealed general demineralization of the bones of the cranium (see Fig. 1) and he was hospitalized for further study. The patient gave a history of having enjoyed good health all his life until the year prior to admission when he noted the insidious onset of generalized weakness, vague pains in his legs, mild constipation, and suboccipital headaches. Physical examination revealed a well developed, fairly well nourished man in no distress. The blood pressure was 182/120 and the pulse 72. The remainder of the physical examination was entirely within the limits of normal except for mild emphysema and a 1.5 cm. hypertrophied anal papilla. The hemoglobin was 12.2 Gms.% and the hematocrit 37. The WBC was 15,500 per cu. mm. with a differential count of 66% polymorphonuclears, and 34% lymphocytes. The erythrocyte sedimentation rate by the Westergren method was 58 mm./hour. The BUN was 33 mg.%, uric acid 6.5 mg.% and the serum total protein 7 Gm./100 cc. with an AG ratio of 3.7/3.3. Urinalysis was normal with a reported specific gravity of 1.010. The serum acid and alkaline phosphatase values were 4.4 and 18.1 King-Armstrong units respectively. Four determinations of serum calcium ranged from 13.2 to 14.9 mg.% while the serum phosphorus determination was consistently 3 mg.%. Repeat x-rays of the skull again revealed general decalcification with an even, ground-glass appearance. A roentgenogram of the chest disclosed a 4 cm. area of fusiform cystic enlargement in the right 8th rib (see Fig. 2), and a similar lesion in the left 10th rib. A bone survey demonstrated some additional cystic areas in the left innominate bone. Diffuse renal calcinosis was seen when intravenous pyelography was done. Esophograms demonstrated right lateral external compression of the esophagus at the level of the thoracic inlet with deviation of the esophagus to the left (see Fig. 3). A diagnosis of parathyroid adenoma was made and the right neck was explored through a "thyroid" incision. A 6 by 4 x 4 cm. firm, smooth, well encapsulated, very dark reddish-brown mass was encountered posterior to the right lateral thyroid lobe. The tumor was adherent to and displaced the esophagus to the left but no invasion was apparent. The tumor was removed intact and found to weigh 53 grams. On cut section it was very dark brown and several cystic spaces from ½ to 2 cm. in diameter containing dark, thick bloody fluid were found. Microscopic study revealed the tumor to be made up of closely packed, relatively small cells with rounded, medium-sized nuclei characteristic of parathyroid adenomata (see Fig. 4). The patients post-operative course was uneventful. Daily serum calcium determinations beginning on the day of surgery were 14.9, 12.1, 11.2, 9.7, and 8.8 mg.% following which the value returned to normal range where it has remained to the present. The patient was given calcium gluconate by vein and oral calcium lactate for the first week following his surgery. Although neither a positive Chvostek or Trousseau sign could be elicited during the post-operative period the patient became very apprehensive and complained of a feeling of impending disaster during the 3rd post-surgical day. This was felt to be a significant manifestation of hypocalcemia. He is now asymptomatic and recent x-rays show progressive re-calcification of the skeleton with healing of cystic areas.

Anatomy

The parathyroid glands are typically four in number and normally have the shape of a tiny rice kernel ranging in color from light tan to brown. They are small, measuring about 4 by 3 by 2 mm. and weighing usually between 30 and 35 mg.[3] The glands arise in the embryo from the dorsal extremities of the third and fourth pharyngeal pouches. Those originating from the third pouches together with the thymus are typically carried farther caudally than are those derived from the fourth branchial pouches. Therefore, the parathyroids from the fourth pouches are usually located more cranially on the thyroid gland, and are called the superior parathyroid glands, while those derived from the third pouches are typically freed from the thymus and become associated with the thyroid gland toward its lower pole, and thus constitute the inferior parathyroid glands. All of the glands are normally located upon the posterior aspect of the lateral lobes of the thyroid gland. However, it must be recognized that while parathyroid tissue usually lies in the thyroid region, it may occur anywhere between the level of the bifurcation of the common carotid and the mediastinum.

Physiology

If parathyroid extract is administered to a normal individual or to a hypoparathyroid patient, four metabolic functions are altered in a definite sequence; that is, one obtains consecutively changes in the direction of hyperphosphaturia, hypophosphatemia, hypercalcemia, and hypercalcuria.[2] There are two theories in regard to the action of parathyroid hormone. One is that the hormone acts directly on bone tissue to cause its dissolution with electrolyte changes being secondary to bone changes. The other school of thought believes that the hormone acts on the electrolyte equilibria of the body fluids and that the bone changes, when they occur, are secondary to the chemical changes.[2] Keeping the sequence of events in mind, the second hypothesis would seem to be the more logical, that as a result of parathyroid extract the calcium rises because the phosphorus falls. The tendency with parathyroid extract is to pull calcium from the bone. If the first effect of the hormone were an increase in serum calcium, supersaturation would result and this would immediately tend to stop bone resorption and the whole process would stop. However, keeping in mind the equilibrium constant governing calcium and phosphorus values, if the first step is to lower the serum phosphorus level then a change in the direction of undersaturation results which would increase the pull of calcium and phosphorus into the body fluids from bone.[2]

Pathology

Normal parathyroid tissue is composed of closely packed, relatively rounded, poorly outlined small cells from 6-8 microns in diameter. They have somewhat large deeply staining nuclei and scanty cytoplasm that stains poorly and often appears to be vacuolated. After childhood, groups of large fat cells similar to those of adipose tissue appear throughout the glands. Also, some of the principal or chief cells undergo changes most apparent in the cytoplasm. Some develop more abundant, finely granular, reddish-pink staining cytoplasm and are then called oxyphil cells. Small oxyphil adenomas do occur but rarely cause hyperparathyroidism. A few chief cells acquire abundant non-staining cytoplasm and are designated water clear or "wasserhelle" cells, and are thought to be hyperfunctioning forms.[3]

Parathyroid adenomas are benign tumors, usually of chief cells somewhat larger than those in a normal gland. There may be variation in cell size, sometimes with a few huge nuclei. Occasionally acini similar to those of a thyroid adenoma are found. Sometimes the cells have abundant water clear cytoplasms and closely resemble the cells of primary hyperplasia. Adenomata vary in size from structures which are smaller than the normal parathyroid to tumors of several inches in diameter. Norris reported the weight of the average adenoma in his series to be 12.7 Gms. with the smallest and largest weighing 0.4 and 120 Gms. respectively.[4] The largest adenoma found in the first 100 cases of hyperparathyroidism at the Massachusetts General Hospital weighed 53 Gms. In from 6[4]-8[5]% of all cases of hyperthyroidism multiple adenomas are found. Approximately 90% of primary hyperparthyroidism is due to adenomata with hyperplasia making up the bulk of the balance.[6]

Primary parathyroid hyperplasia is an enlargement of all of the glands of unknown cause. The upper parathyroid glands usually become much larger than the lower glands, often twentyfold, and may weigh 30 Gms. each. the total weight has varied from 2 to 70 Gms. The glands are encapsulated but usually differ from the rounded adenomas in being lobular, softer and a darker shade of brown. Clinically these patients almost always have renal stones, and distress from these is the usual principal symptom. Here there is no bone disease as a rule, but mild osteoporosis may be present. A few cases of parathyroid carcinoma have been documented and in contrast to thyroid carcinoma, are usually functioning tumors.

Clinical Findings

The clinical findings in hyperparathyroidism may be divided into three headings: (1) those due to bone disease, (2) those due to disease of the urinary tract, and (3) those due to hypercalcemia per se.[2]

Bone disease is not an essential part of hyperparathyroidism. Severe hyperparathyroidism without bone lesions is seen in many cases. The bone disease of hyperparathyroidism, when present, consists of a generalized decalcification with superimposed cysts and tumors and is designated osteitis fibrosis generalisata of von Recklinghausen or osteitis fibrosa cystica. The terminology is somewhat misleading since the bone disease is not an inflammation, or "osteitis." "Generalisata" is perhaps a more appropriate term than "cystica" since it calls attention to the fact that the bone changes are generalized as is the case with most metabolic diseases, and is an important differential point in distinguishing hyperparathyroidism from certain other conditions. The superimposed cysts are probably degenerative phenomena being filled with fluid and lined with fibrous tissue. Bone tumors seen in the bone disease of hyperparathyroidism consist of solid masses of soft tissue without bone, composed of osteoblasts, osteoclasts, and the supporting tissue of bone marrow. These masses are most commonly found in the jaws, metacarpals and metatarsals, and ends of long bones. All stages of skeletal decalcification are seen from no bone changes to the patient with near complete loss of skeleton, who is growing shorter, becoming pigeon-breasted, and requires a larger collar for his shortened and thickened neck. The early symptoms may be vague pains often attributed to "rheumatism" or "arthritis." Bone tenderness is a common feature and when marked fibrosis of the bone marrow occurs anemia and leukopenia are commonly found.

The commonest clinical manifestation of hyperparathyroidism is urolithiasis.[7] Approximately 60% have urolithiasis whereas only about 25% have osteitis fibrosa generalisata. Urinary tract symptoms may be due to the formation of kidney stones, to calcium deposits in the kidney parenchyma, or may consist of polyuria and polydipsia secondary to hypercalcuria and hyperphosphaturia. In several instances an erroneous diagnosis of diabetes insipidus has been made. Because approximately 3 out of 4 cases of hyperparathyroidism present with renal disease and 4-5% of patients with urolithiasis have associated hyperparthyroidism it is evident that the urologist has a paramount role in the diagnosis of this malady.

Just as hypocalcemia causes increased excitability of the nerve-muscle apparatus and tetany so hypercalcemia causes decreased excitability. Hypotonicity of muscles, general muscle weakness, constipation, and loss of appetite are seen as a result.

In addition to the above symptoms and signs other less common but frequently present findings are lassitude, weight loss, bradycardia, cardiac irregularities, leg ulcers, peripheral vascular disease, band keratitis, nausea, and vomiting.[1] Presenting complaints may also be psychotic symptoms such as delusions, general stupor, memory impairment, or psychic fatigue. Peptic ulcer is a frequent complication of hyperparathyroidism. Black reported a series in which peptic ulcer was demonstrated in 24% of the patients and suspected in an additional 15% although the duodenal lesion could not be identified.[8] Gross reviewed the reported cases of hyperparathyroidism associated with pancreatitis or pancreatic calcification or both but the exact relation between the two diseases is still unknown.[9]

Diagnosis

The diagnosis of hyperparathyroidism depends upon a high degree of suspicion together with the findings of a high serum calcium and a low serum phosphorus. The very variety of symptoms relating to a number of the body systems characterizes the disease. In measuring the serum calcium value one must keep in mind that a number of other conditions may give an elevated level. Among them are injection or ingestion of large doses of calcium, bed rest, milk and alkali syndrome in ulcer patients, excess vitamin D, testosterone and estrogen therapy for carcinoma, metastatic carcinoma to bone, multiple myeloma, and sarcoidosis. An elevated serum alkaline phosphatase is of value in making the diagnosis. However, the phosphatase level is an index not of the degree of hyperparathyroidism but merely of the degree of bone disease.[2] The Sulkowitch test is a qualitative test for urine calcium and consists of adding urine to a solution containing oxalate salts. The degree of hypercalcuria is indicated by the intensity of the calcium oxalate precipitate. Although not diagnostic a persistently positive test at the 3 to 4 level favors hyperparathyroidism whereas a test that is consistently 1 plus practically rules it out.

Treatment

Medical treatment of hyperparathyroidism by increasing the calcium intake has been tried and found to be of no avail. Irradiation has only been of value in parathyroid carcinoma for which operation has proved inadequate.

Although the tumor described in the above case report was located and removed with relative ease, it must be pointed out that surgery of the parathyroid glands is as a rule much more difficult than operations on the thyroid. Cope describes the successful surgical treatment of hyperparathyroidism as depending on "a positive laboratory diagnosis, a knowledge of where the parathyroid glands are to be found, the technical skill to uncover them, and the tutored eye to recognize the various types of pathologic glands to be encountered."[10] Obviously, the first surgical exploration of the neck affords the best opportunity to find the parathyroid bodies. In approximately 90% of cases a cautious and thorough dissection of the structures of the neck anterior to the prevertebral fascia will disclose the pathology. Parathyroid adenomas show no predilection for one side or the other of the neck and either side may be chosen for the beginning of the dissection. Castleman reported about 20% of parathyroid adenomas observed at the Massachusetts General Hospital as being mediastinal in position.[3] Esophagograms may be of great value both in making the diagnosis of parathyroid tumor and in localizing the growth. If a neoplasm is found it is essential that removal of the tumor with the capsule intact be accomplished. If a single adenoma is found one is justified in stopping the operation after one side of the neck has been explored and waiting to see if the patient makes a full recovery as approximately 90% have a solitary adenoma. A "quick look" on the other side probably would not reveal a second adenoma and would make a second operation more difficult. If the hyperparathyroidism turns out to be the result of hypertrophy the surgeon should then attempt to uncover all four parathyroid glands and remove three of them leaving behind with a good blood supply approximately 200 mg. of the fourth.[11] Cope believes the remnant left behind should not exceed the size of a large normal gland, about 40-80 mg.[10] If the etiology of the hyperparathyroid state is not found in the neck, or if all the primary hyperplastic glands were not found, exploration of the mediastinum should be done at a later date. In the event that the pathology is parathyroid carcinoma a radical neck dissection should be carried out since the route of metastases is first to the regional lymph nodes.

Post-Operative Tetany

The incidence and severity of post-operative tetany is dependent upon the severity of the preexisting hyperparathyroidism. In moderately severe disease secondary to neoplasm moderate atrophy of the undiseased glands may have taken place. The degree of tetany observed following the surgical treatment of the uncommon parathyroid hyperplasia is governed by the judgement and technical ability of the surgeon as to how much tissue is preserved and how undamaged it remains. The tetany of post-operative hyperparathyroidism is usually of short duration. However, the tetany of recalcification when severe bone disease exists, may be of weeks duration.

Summary

Some of the more important aspects of primary hyperparathyroidism have been reviewed. A case of solitary adenoma, by far the most frequent cause of this malady, has been reported. The variability of symptoms which characterize this disease has been stressed. Since urolithiasis is the most frequent clinical manifestation of the illness the need for serum calcium and phosphorus determinations to be done on all patients with urinary tract calculi is evident. A well organized, cautious, and often painstaking search is necessary for the successful surgical treatment of this disease.

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PARATHYROID-PITUITARY SYNDROME

A parathyroid-pituitary syndrome has been mentioned in the literature although some observers no longer consider it to be a tenable one.

The coincident occurrence of the pituitary disfunction and of adenomatous hyperplasia of the parathyroid gland with primary hyperparathyroidism led to the conclusion that the condition had a common cause: an eosinophilic adenoma of the pituitary gland. The evidence of a causal relationship, however, between the two glands was never conclusively proven.

Perlman, R. Arch Path. 38:20, 1944

THYROGLOSSAL CYSTS AND SINUSES IN CHILDREN

Results of the Sistrunk Operation

The surgical extirpation of thyroglossal cysts and sinuses in children would appear to be a relatively simple problem. However, this large series of cases proves that conservative approaches often lead to recurrence, with as many as six operations being necessary in some patients. The authors urge that the original resection be done by the radical Sistrunk procedure, with removal of the central part of the hyoid bone.

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THE SISTRUNK procedure,[5] as a method of surgical extirpation of thyroglossal cysts and sinuses, has been the preferred method of treatment in these conditions for many years. Yet, a child may still be submitted to a lesser procedure, only to suffer a recurrence that leads to another, more definitive, operation.

The purpose of this report is to emphasize the continuing need for a definitive operation with removal of the entire thyroglossal tract *initially*. This problem will be underscored by the number of children who represented recurrent cases and who subsequently were cured with the radical (Sistrunk) procedure.

Embryology

Downward projection of the thyroid anlage from the region of the foramen caecum of the tongue begins in the 2-mm. to 2.5-mm. human embryo, and the thyroid lobes descend to their position in the anterior portion of the neck.

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Normally, the connection between the cervically placed thyroid gland and its point of origin at the foramen caecum disappears in all but a few instances. Where this midline tract remains, it is lined by squamous or columnar epithelium previously carried downward by the thyroid gland at the time of its descent. Cyst formation can occur at any point along the tract, but the usual location is subcutaneously just above or below the hyoid bone. The latter structure, elaborated by the second branchial arch, fuses in the midline, often in close relationship to the thyroglossal tract. In a few instances the tract actually courses through the center of the hyoid bone.

Normally the tract does not open to the skin.[3] A cutaneous fistula is a secondary feature, resulting from spontaneous rupture or from surgical draining or attempts at removal.

Material and Methods

The Mayo Clinic records pertaining to clinical diagnosis of cyst or sinus of the thyroglossal duct during the 15-year period from 1939 through 1953 disclosed that 153 patients with this condition had not reached their sixteenth birthday; this group of patients forms the basis for the present study. Of the 153 patients, 39 were not treated surgically, for reasons that will be discussed. Pathologic examination of tissue confirmed the diagnosis of cyst or sinuses of the thyroglossal duct in the 114 patients treated surgically. Follow-up information was obtained on both groups of patients up to January 1, 1958.

Surgical Group

Age and Sex Incidence. — There were 66 male patients and 48 female patients in the surgical group of 114 cases. The ages of 6 to 12 years were most heavily represented (table 1). Four infants under the age of 36 months were operated on by the Sistrunk method; they had uneventful postoperative recoveries, and none required tracheotomy.

Location of Sinus or Cyst. — In only 13 patients did the sinus or cyst occur to the left (eight patients) or right (five patients) of the midline; apparently the latter location played a role in the mistaken preoperative diagnosis of branchial cleft sinus in several instances. The sinus occurred much lower than usual in five patients, and second incisions made lower in the anterior part of the neck were of help in the dissection. In one patient the sinus opened deep in the sternal notch, and in another it actually opened on the surface of the manubrium; in each of these cases a tract continued to the foramen caecum in the usual fashion.

The other 101 patients had midline cysts or fistulas in close relation to the hyoid bone. When a cyst was present, the usual history was that of slow progressive increase in the size of the cyst, but in some patients intermittent increase and decrease in size, usually associated with pain and often with redness, were mentioned. None of these children had a cystic mass on the posterior part of the tongue at the foramen caecum.

A sinus was present in 54 patients. Sometimes the sinus was the result of spontaneous drainage of an inflamed cyst, but usually it was the aftermath of unsuccessful prior surgical intervention.

Lipiodol and methylene blue had been injected into the sinuses in four instances. (We believe that these agents are only rarely necessary in establishing the diagnosis.)

Duration of Symptoms and History of Prior Treatment. — The duration of symptoms prior to definitive surgical treatment was variable. However, those patients who gave a history of repeated attempts at surgical treatment of a thyroglossal cyst or sinus were older than the average,

TABLE 1

AGE AND SEX OF 114 CHILDREN WITH SURGICALLY TREATED CYSTS AND SINUSES OF THE THYROGLOSSAL DUCT

Ages	Male	Female	Total
0-5	13*	11*	24
6-9	25	19	44
10-15	28	18	46
Total	66	48	114

* Included are: one male infant aged 11 months, one female infant aged 10 months, and one male and one female infant aged 30 months.

as might be expected. In contrast, the "primary" patients, that is those patients who had had no previous surgical therapy, were younger than the average.

Although the younger patients were, as a rule, primary cases, one 3-year-old child had been treated four times by incision and drainage, and one 5-year-old child had also had this procedure done four times and had undergone one attempted excision as well. One 9-year-old child and one 10-year-old had been treated by five and four attempted excisions, respectively, before definitive operation was performed.

There were 50 primary cases and 64 "secondary," or recurrent, cases. A total of 45 incision-and-drainage procedures and 64 attempted excisions had been performed on the 64 patients in the "secondary" category (table 2).

In only one of the 114 patients was the discovery of a cyst or sinus of the thyroglossal duct an incidental finding. In the others it was the chief complaint, and it prompted the present medical attention. As evidenced in table 2, over half the patients sought help because of the persistence of symptoms after prior attempts at surgical correction.

Differential Diagnosis. — The diagnosis is not as difficult in children as it can be in adults, in whom the problems of enlargement of the pyramidal lobe and midline adenomata of the thyroid are more prevalent. Cysts and sinuses of the branchial cleft are usually not located anteriorly, whereas thyroglossal cysts and sinuses almost always occur high in the midline and in close relationship to the hyoid bone. The exceptions to this rule in this series were rare, and they have been discussed.

Management. — Of the 114 patients treated surgically at the clinic, 109 (96 per cent) underwent the Sistrunk operation. A transverse incision 4 to 5 cm. long made directly over the cyst gives good exposure. A vertical incision should be avoided since subsequent scar formation is often unsightly and may even produce a midline contracture. If there is a sinus which occurs at or near the hyoid bone, an elliptic transverse incision is made around the tract.

TABLE 2

PRIOR ATTEMPTS AT TREATMENT IN 64 CHILDREN WITH CYSTS OR SINUSES OF THE THYROGLOSSAL DUCT

Type of Prior Procedure	Number
Incision and drainage	45
Attempted excision	64
Cautery (electrocautery or silver nitrate)	8
Aspiration	6
Sclerosing agent	2
Biopsy	2
X-ray	1
Total procedures	128

Although Sistrunk initially suggested injecting a weak solution of methylene blue into the sinus tract in order to outline its course more definitely, this is no longer thought to be necessary.

Taut traction of the edges of the skin with sharp retractors will allow adequate exposure while the cyst or sinus tract is dissected from between the sternohyoid muscles and their attachment to the hyoid bone. Wide dissection of the tract is extended toward the hyoid bone, care being taken to stay well outside the cyst and any inflammatory zone. Although the tract may pass beneath the bone, it also may pass superficial to it or through it; this fact necessitates removal of a central segment of hyoid bone 1 to 2 cm. long.

Often the tract may be broken or become only an atretic fibrous band at or just above the hyoid bone. A great tendency on the part of the inexperienced surgeon is to ligate the tract high, but for the procedure to be adequate, dissection *must* be carried out to the foramen caecum. This maneuver is facilitated by inserting the left index finger into the patient's mouth; once the foramen caecum has been stabilized by forward and upward pressure with the intra-oral finger, a careful "coring out" of a block 3 to 5 mm in size through the geniohyoglossus and geniohyoideus muscles is carried out. The dissection should be taken up to but not through the mucous membrane of the foramen caecum. (Sistrunk made the point that the direction of the thyroglossal duct above the hyoid bone corresponds to a line drawn at a 45-degree angle to the horizontal position of the patient. This may vary considerably with the patient's position, but with the foramen caecum as a guide it should be possible to determine the relationships by bimanual tactual control and so assure an adequate dissection.)

If the mucous membrane of the pharynx or foramen caecum has been opened, it should be closed with interrupted sutures of fine catgut. Placement of catgut sutures through the periosteum of the hyoid bone will allow approximation if this is desired, but no ill effects have followed when the ends of the hyoid bone were left apart. Gross[2] makes the point that there may be some hesitancy in carrying the dissection to completion in the depths of the wound for fear of entering the mouth. He points out, however, that the thyrohyoid membrane, which is deep to the muscles, has a distinct grayish-yellow color in contrast to the red muscle superficial to it. He suggests that the thyrohyoid membrane be exposed initially by puncturing through the muscles at one point; then a scissors dissection may be made around in a circle to establish the block of tissue to be excised. If the sinus occurs lower in the anterior part of the neck, a separate initial transverse elliptic excision of the tract can be started; this will allow tunneling out of the tract subcutaneously up to a point near the hyoid bone where a second transverse incision can be made. The previously dissected tract can then be passed upwards through the subcutaneous tunnel and the dissection carried out in the fashion described. It is not necessary to drain the wound if hemostasis has been adequate and if inflammation has been minimal; otherwise, a small, soft drain is left in place for 36 hours.

Pathology. — Grossly, the specimen of thyroglossal duct consists of a cyst of variable size (usually 2 to 6 cm. in diameter) attached to a tract measuring 3 to 6 cm. in length when it has been removed intact. The amount of surrounding inflammatory reaction is greater in those specimens in which only the fistulous tract remains. Hyoid bone and tongue muscles are represented in the specimen.

Of the 114 children operated on, 60 had presented with a cystic lesion that bore a close relationship to the hyoid bone. The other 54 patients, however, were operated on because of a persistently draining or recurring sinus. Operation was delayed because of an acute inflammatory reaction in seven instances. The type of cell lining the cysts and tracts was mentioned in 50 cases: squamous epithelium was found in 15 cases, ciliated and columnar epithelium in 31, and transitional or cuboidal epithelium in four. In only a few cases was more than one cell type mentioned. No thyroid tissue was found along the course of the thyroglossal duct in this series except in two cases of coincidental removal of small projections of pyramidal lobe that were attached to the thyroglossal apparatus.

Results of Surgical Treatment. — Follow-up information was obtained on 84 (74 per cent) of the 114 patients operated on at the clinic. Of these patients, 81 (96.4 per cent) have been free from recurrence of symptoms referable to the thyroglossal duct for at least 5 years (table 3).

Only five patients in this study did not have the central portion of the hyoid bone removed. In four instances the tract appeared to stop at the hyoid bone, and the surgeon elected to leave the bone intact. Two of these patients have suffered a recurrence, and one of them exemplifies the classic problem that results from failure to remove a segment of the hyoid bone. This patient, an 8-year-old boy, was first seen at the clinic in October 1945. He had been bothered with recurrent intermittent drainage of mucoid material from a midline sinus near the hyoid bone since July 1944, shortly after excisions had been attempted by his physician. He was operated on at the clinic, but because the fistulous tract appeared to stop abruptly at the hyoid bone, the surgeon elected not to remove a segment of hyoid bone or to carry the dissection to the base of the tongue. Two months later the patient returned with a recurrent fistula. A second operation was carried out, and again, because there was still no sign of a tract above the hyoid bone, the surgeon elected not to remove its central segment. In March 1946, the patient returned with a recurrent thyroglossal cyst approximately 1 cm. in diameter at the hyoid bone. A segment of hyoid bone was removed, allowing excision of

TABLE 3

5-YEAR FOLLOW-UP IN 153 CHILDREN TREATED FOR CYSTS OR SINUSES OF THE THYROGLOSSAL DUCT

	Number of patients
Operative treatment (Sistrunk procedure)	114
Patients traced	84
Recurrences	3 (3.6%)
Complications	0
Deaths	0
Nonoperative treatment	39
Patients traced	6
Required operation elswhere later	1
Deaths	0

the tract to the base of the tongue. The patient has not had any further difficulty.

The fifth patient did not have the central segment of the hyoid bone removed here because it had been done previously elsewhere. This was, in fact, the only patient of the 64 secondary cases in whom some operation approaching the Sistrunk procedure had been performed. Thus, 63 of 64 patients with recurrence after prior operative attempts had not had removal of a segment of hyoid bone.

Although there was a recurrence rate of 3.6 per cent among the 84 children traced, recurrence was confined to patients who did not have the central segment of hyoid bone removed. No recurrence developed when the classic Sistrunk procedure was performed as a primary procedure.

Complications. — There were no major complications and no deaths; only an occasional patient experienced incisional inflammation or drainage in the postoperative period.

Nonsurgical Group

There were 39 patients aged 15 years or younger for whom operative treatment was not performed here. In nine instances operative treatment was either refused (six patients) or not advised because of the presence of other, more serious, conditions (three patients). In the remaining 30 patients, delay of operation until the age of 6 to 10 years was advised. Of these 30 patients, only six could be traced in spite of multiple follow-up letters. Only one of the six had persistent symptoms requiring operation. Thus, although the information is incomplete, it appears that during the period of the follow-up some of these patients have remained free from symptoms.

Comment

In another paper[1] it was determined that nearly half the patients coming to operation had the onset of pertinent signs or symptoms relative to the thyroglossal cyst or sinus before their sixteenth birthday, yet only 30 per cent had a definitive operative (Sistrunk) procedure during this same age span. The effect of delay of the almost certainly necessary operation in such instances is underscored by the expense and discomfort coincident to repeated incomplete surgical procedures. Although many of the children experience symptoms of thyroglossal cysts or sinuses in infancy or early childhood, we believe that the risk of operation is minimal if it is performed as an elective procedure when these children are 6 to 10 years of age, at a time when their cysts are not inflamed. Obviously, some children who are having considerable difficulty with repeated episodes of inflammatory reaction, abscess formation, and excessive drainage will need operation at an earlier age. Four of our patients were operated on without difficulty at 30 months of age or younger, but potential problems inherent in the surgical management, such as those pertaining to the airway and to postoperative complications, discourage us from urging operation at such an early age. Since most of the patients have symptoms that are not incapacitating, we usually arrange the operation to correspond with a school vacation.

It has been claimed that carcinoma can develop in remnants of the thyroglossal duct. Keeling and Ochsner[4] added two cases of their own to a group of such patients studied. It is interesting to note that all of these involved papillary adenocarcinoma. It has been pointed out that a lining of squamous epithelium was found in a large percentage of our specimens. It might have been expected, therefore, that in at least a few of the cases cited by Keeling and Ochsner, squamous carcinoma would have been demonstrated. In our present study no cases of either papillary or squamous carcinoma were found. One would expect papillary carcinoma to originate in the pyramidal lobe of the thyroid gland.

In the patients with thyroglossal sinuses the problem of drainage is such that there is seldom any question as to the need for surgical removal. Also, in the majority of patients with recurring cystic swelling no question arises as to whether operation should be performed. In those few patients with a small asymptomatic cyst, however, the need for surgical removal may be questionable; follow-up study of patients whose cysts were not removed indicates that some of the cysts remained quiescent for many years.

Only five patients (4.3 per cent) did not have the central segment of the hyoid bone removed. A recurrence developed in three of these; one case has been described in detail; in another patient with recurrence the surgeon elected to stop dissection at the hyoid bone; and, in another, bone had (presumably) been removed elsewhere at the time of the prior surgical procedure. No patient has experienced a recurrence following adequate removal of the hyoid bone. In contrast, 98 per cent of the patients in the "secondary" category had not had a segment of the hyoid bone removed initially.

Thus, three patients experienced a recurrence following operation by us, and all three had a history of one or more inadequate surgical procedures in the past. In no instance has there been a recurrence in a fresh, uncomplicated (primary) case in which a classic Sistrunk procedure was performed.

From these observations we conclude that complete removal of the thyroglossal duct apparatus is best accomplished by performing a Sistrunk procedure as initial treatment. Further, we believe that the keystone to the operation and to successful treatment with the smallest likelihood of recurrence is the removal of the central portion of the hyoid bone.

Summary

A group of 153 children with cysts or sinuses of the thyroglossal duct, of which 114 were subjected to radical operation by the Sistrunk method, was studied. Postoperative follow-up information on 84 of the 114 patients revealed a recurrence rate of 3.6 per cent; recurrence was confined to those patients in whom the central hyoid bone had not been properly excised.

The operative technic was reviewed in detail, and the importance of removing the entire tract by the Sistrunk method, including the central portion of hyoid bone, was emphasized.

The 39 patients not treated surgically were discussed briefly.

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ANSWER TO WHAT'S YOUR DIAGNOSIS

From Page 509

Pelvic abscess, appendical in origin; multiple myomata of the uterus. The confusing nodularity of the abdominal mass had led all of the examining physicians to the erroneous diagnosis of carcinoma of the ovary.

HAY-FEVER POLLENS Of Southeastern Minnesota

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The sneezes, sniffles, itching eyes and asthma associated with hay fever may be present for as much as six months of the year in southern Minnesota, a period that covers the three pollen seasons. This paper presents detailed pollen counts over a 5-year span, and gives the physician a good idea as to "What's in the air?"

The question of "What's in the air?" comes up frequently in the handling of allergic patients, and an accurate answer is often necessary to successful management. The extensive study of Ellis and Rosendahl,[1] in 1933, provided a wealth of information about the distribution of the vegetation that probably produced hay fever in Minnesota but gave no statistics on atmospheric pollens. Wittich's[2] studies on air-borne pollens were centered in the Minneapolis-St. Paul region.

Consequently, it appeared to be desirable to obtain more detailed information about aeroallergens in the region of Rochester, in southeastern Minnesota, which is primarily a farm region. The following data have been compiled from pollen counts made from 1953 through 1960. Prior to 1956, only the fall pollens were studied, but counts during the complete hay-fever season have been made for the past 5 years.

Method

Petrolatum-coated glass slides changed at 8 a. m. daily were exposed for 24 hours in a standard sampling device[3] on the roof of the 11-story Mayo Building of the Mayo Clinic.

Section of Medicine, Mayo Clinic.

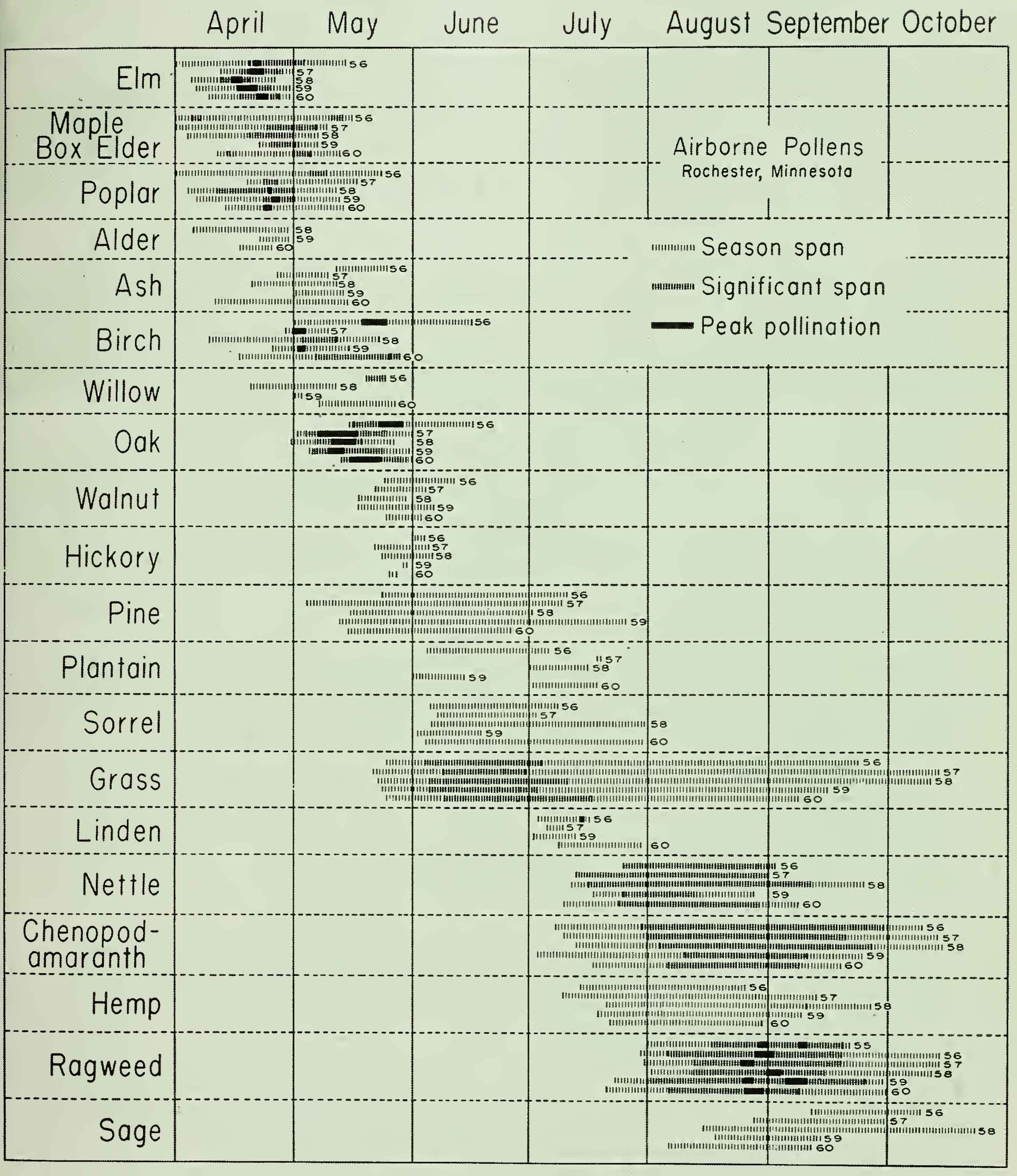

Fig. 1. Summary of pollen seasons in Rochester, Minnesota, from 1956 through 1960. See text for details.

Despite known shortcomings that may be circumvented by some of the newer sampling instruments under investigation, the device that was used is still employed throughout the country, thereby facilitating comparison of data. Calberla's solution was used for staining and counts were recorded for 1 sq. cm.; when the pollen granules were sparse, the number in 2 or 3 sq. cm. often was counted and the average taken. All types of pollen occurring with any regularity were identified and counted, although up to about 5 per cent of the forms on any one slide were sometimes unidentifiable. Many of these doubtlessly were abortive or deformed granules of the kind in current abundance.

Results

Figure 1 depicts each pollen season for the afore-mentioned 5-year study of complete seasons. Each shaded strip represents the season span of a particular pollen for the year indicated at the right end of the strip, except for stray granules occasionally seen many days or weeks remote from the season. The more heavily shaded portion of the strip represents the time during which the count was high and sufficiently sustained to be of general allergic significance. Some of the pollens, such as ash, sorrel and sage, were so scattered throughout the season that no particular time of concentration could be noted. Others, such as elm, oak and ragweed, consistently demonstrated extremely high peak periods, as represented by the black portions of the bars. It is to be noted that the time of pollination varied considerably from year to year for some species, while for others it remained rather consistent.

Figure 2 presents, in the more familiar X chart, the average season of pollination of each plant for the 5-year period, the darker X's indicating the period of higher, allergically significant, pollen counts.

In southeastern Minnesota, the appearance of maple pollen abruptly opens the tree season at the beginning of April, the total count for March never exceeding 10 granules. Other trees follow in rapid succession, with the oaks and nut trees winding up the season, except for pine, which continues to pollinate into July, and the linden, whose pollination is limited to July.

The grass season begins at the end of May and has spent the bulk of its force by July 4. Near the end of July, the chenopod-amaranth pollens come into evidence, but the principal hay-fever pollen of the entire year is ragweed, which becomes important by August 10 and continues to about September 17. By the end of September, there is seldom enough pollen of any kind to be of clinical significance.

The amount of exposure to an offending pollen determines, to some extent, the degree of symptoms resulting; therefore, the actual counts are of interest. To list each day's count for each pollen, even for a single year's study, would result in a confusing maze of figures, defeating one's purpose. Consequently, the daily counts were consolidated into monthly totals for each pollen, in conformity with the Annual Reports of the Pollen Survey Committee of the American Academy of Allergy, to facilitate comparison with findings in other parts of the country under similar study. In the accompanying table, the 5-year range for these monthly totals is shown in the upper figures in each category, while the figure in parentheses is the average value of the counts over the 5-year period. Thus, the count of elm pollen for April varied from a low of 321 granules (1958) to a high of 1052 granules (1960), with the average over the 5 years being 675. Likewise, the highest count on 1 day for elm pollen was 436 granules, whereas the high on a single day for another year was as little as 125; the average for the high day's count over the 5 years was 293. The season totals are similarly presented.

Comment and Conclusions

These data indicate that the three pollen seasons in the Rochester area span about 6 months. Clinically, the tree season is the least troublesome, probably because people are less likely to be outdoors at that time. Although several tree pollens, including oak, are found in significant volume, elm is by far the worst offender in this group. Pine is included only as an incidental finding, since it presumably is not active allergenically.

The pollens of the grasses, while never present in great concentration (18 being the highest single day's count in this study), affect a

Table
Yearly Variation in Pollen Counts*
at Rochester, Minnesota (1956-1960)

Pollen	Monthly totals of pollen granules							Season total	High day
	April	May	June	July	August	Sept.	Oct.		
Elm	321-1052 (675)	0-51 (11)						321-1052 (686)	125-436 (293)
Maple-box elder	43-299 (192)	12-178 (103)						195-477 (295)	37-98 (57)
Poplar	15-207 (109)	4-53 (18)						65-216 (127)	19-57 (31)
Alder	4-29 (14)	0-1 (1)						4-30 (14)	2-14 (6)
Ash	0-23 (9)	8-26 (15)						8-35 (24)	4-12 (7)
Birch	1-13 (6)	30-258 (108)	0-5 (4)					37-260 (115)	6-110 (43)
Willow	1-14 (4)	3-68 (30)	0-4 (2)					17-72 (35)	4-24 (13)
Oak	0-1 (1)	441-1370 (938)	1-21 (4)					442-1371 (943)	97-394 (229)
Walnut		11-39 (23)	5-17 (8)					21-48 (31)	3-9 (6)
Hickory		1-7 (3)	2-5 (2)					1-12 (4)	1-3 (2)
Pine		6-116 (46)	19-86 (49)	1-6 (3)				57-138 (98)	8-30 (17)
Plantain			0-8 (2)	1-7 (5)				1-12 (6)	1-4 (2)
Sorrel			3-26 (15)	2-14 (6)				5-31 (20)	2-6 (4)
Grass		4-20 (11)	105-223 (141)	24-100 (70)	14-35 (22)	3-14 (9)	0-3 (1)	187-343 (254)	13-18 (17)
Linden				7-36 (16)				7-36 (16)	3-13 (7)
Nettle				4-36 (24)	15-49 (30)	1-6 (2)		28-84 (56)	3-13 (7)
Chenopod-amaranth				3-21 (8)	49-133 (92)	19-94 (52)	1-11 (3)	76-209 (147)	6-28 (15)
Hemp				5-32 (12)	23-50 (33)	1-6 (3)		28-63 (45)	4-16 (7)
Ragweed				0-27 (7)	1065-2119 (1415)	587-1620 (877)	0-32 (15)	1776-2885 (2305)	158-337 (220)
Sage					3-11 (6)	9-18 (12)	0-4 (2)	12-29 (20)	2-6 (3)

*Figures are pollen granules per square centimeter of a glass slide exposed as described in the text. Averages are in parentheses.

considerable number of persons in this region. Violent attacks are precipitated in those subjected to heavy exposure, as in lawn mowing, but even patients avoiding such contact may be severely affected. It appears doubtful that either plantain or sorrel are of much importance, considering the small amounts of either that were found.

The fall pollens account for an overwhelm-

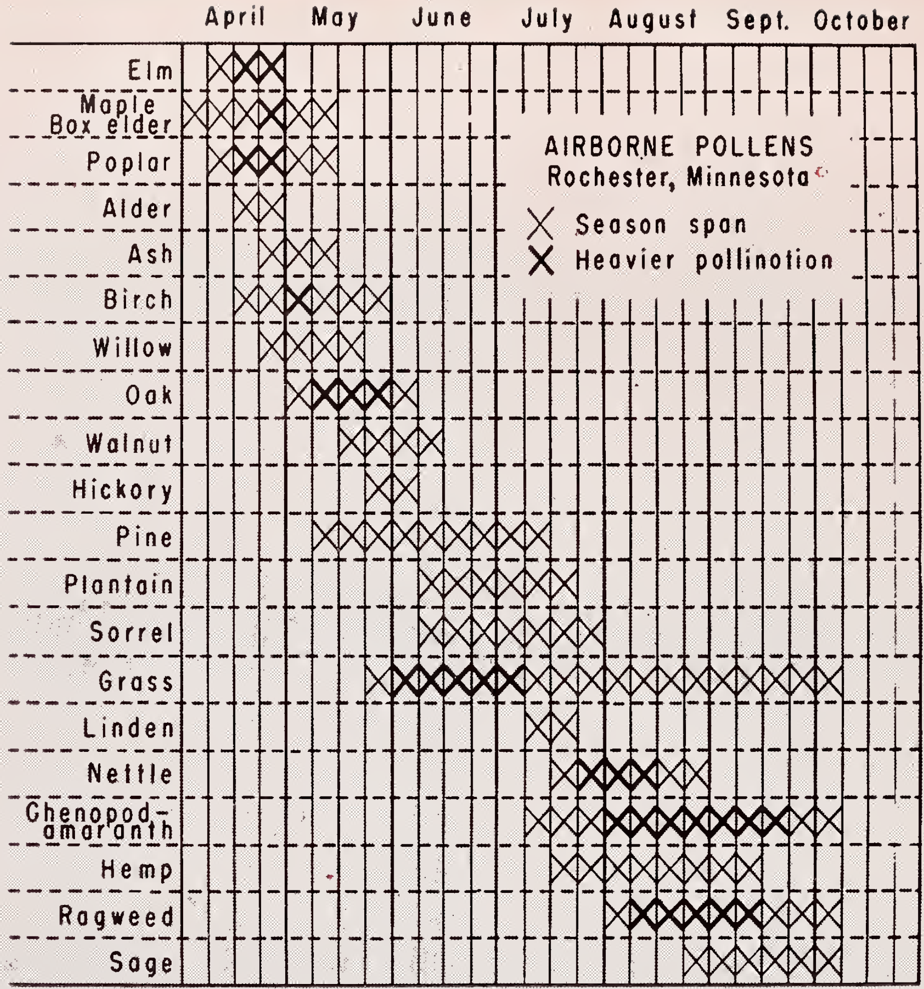

Fig. 2. Pollen calendar for Rochester, Minnesota, as determined by 5-year survey from 1956 through 1960.

ing majority of cases of pollinosis, and ragweed is usually the cause. The only other pollens of significance in the fall are those of the chenopod-amaranth group, including Russian thistle, kochia (burning bush) and pigweed. On a rare day, they have comprised as much as 25 per cent of the total granules of pollen on the slide, but the season's total of pollen of these species seldom is more than 6 per cent that of ragweed. Persons residing in this region who manifest sensitivity to one or more of these pollens are almost invariably sensitive to ragweed also, and the latter usually proves to be the main offender.

Finally, some mention should be made of Durham's ragweed pollen index, by which a value for each geographic region is calculated on the basis of the pollen count for the entire season, the number of days during which the count is significantly high, and the highest day's count. On this basis, any figure more than 10 connotes potential trouble for the average ragweed-sensitive patient; the values for Rochester ranged between 68 and 88 for the years 1953 through 1960.

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Calming the Irritable Infant with a Simple Tonal Device

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Quiescense and sleep in the newborn and the infant are often erratic and unpredictable. The disturbance of the fussy baby especially in the first 3 or 4 months may completely disrupt the home and cause the parents to seek medical advice.[1-3] Supplemental measures to calm the irritable infant may also be required in the well baby that is neither wet nor hungry.

Over the ages, techniques such as holding, rocking, cuddling, crooning, and sedating have been successfully used to soothe the fussy baby for brief periods of time.[3, 4] In recent times, distressed parents have observed that infants readily fall asleep when noise-producing appliances are operated nearby. Others have observed the calming effect of the hum and slight vibration of an automobile ride.

With these observations in mind, a simple electronic device emitting a constant tone was perfected and made available to us for testing. This is a preliminary report on a twelve week period of observations of the effect of this device on infants in the hospital nursery and the home.

Material

The unit (Slumber Tone) is a small lightweight transistorized speaker powered by a self-contained penlite battery. Current consumed is about ½ milliamp and this device will operate about 2,500 hours on one battery (Eveready #915). The tone is about 320-350 cycles—(B flat one octave below middle C). The case is made with medium impact styrene that will not break on dropping. The device is safe because it is free of sharp surfaces or edges and from electrical shock hazard. No external wiring or fasteners are needed. It is placed in the crib or bed along side the fussy infant and can be removed after the baby has gone to sleep (Figure 1).

Rest and sleep for parents of irritable infants is the promise of a new transistorized device which calms the infant by emitting a constant tone.

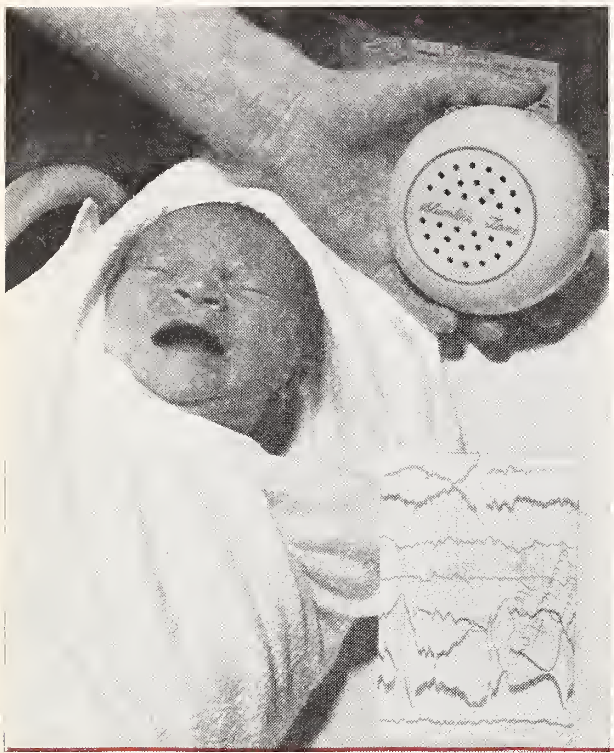

Figure 1: (a) 3½ day old female infant fussing and crying. Slumber Tone placed in crib.

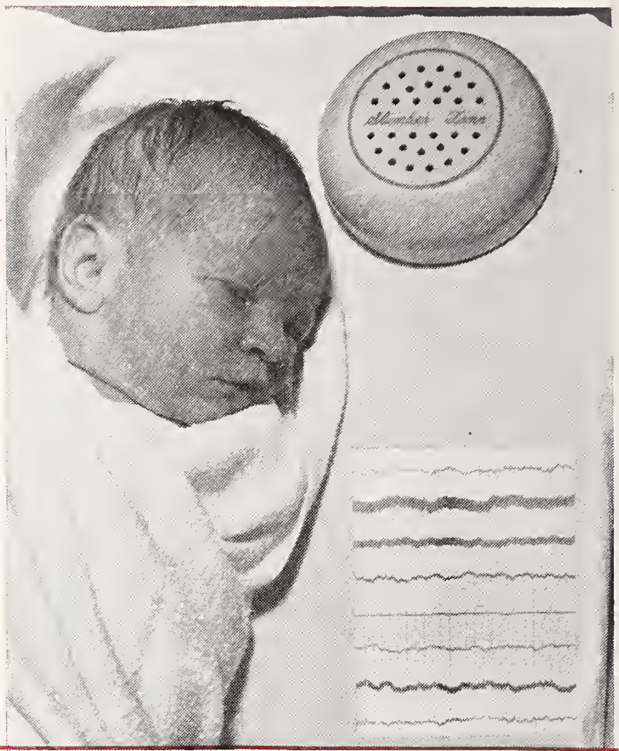

Figure 1 (b) Infant calmed and sleeping in less than 90 seconds. Insets demonstrate typical fussing and calmed tracing.

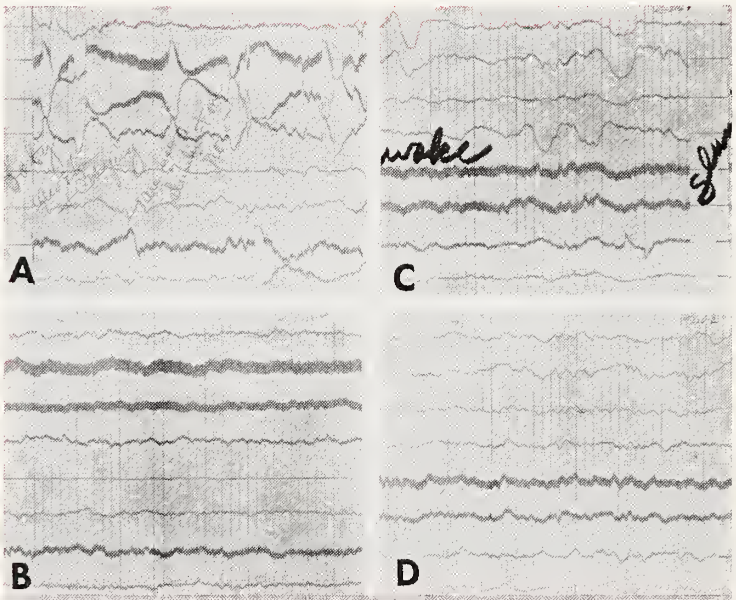

Figure 2 (a) Tracing on 3½ day old female crying and fussing. (b) Infant calmed and sleeping in 40 seconds after Slumber Tone turned on. (c) Male 4 days old awake and fussing. (d) Baby now calmed with Slumber Tone and almost asleep after 90 seconds.

Results

The immediate effect on the crying baby is quiescence and relaxation somewhat similar to that produced when the infant is picked up and held. This calmed infant then readily falls asleep and remains asleep in most cases even when the tonal device is removed (or turned off). Calming is usually instantaneous and sleep follows in 30 seconds to 5 minutes.

Slumber Tone produced desired results in 90% of infants exposed. The effect could be consistently reproduced in the same infant. Calming was not successful in those infants who were ill, wet or hungry. If the environment was not coducive to sleep (e. g., noisy examining room), the device was not always effective on first exposure. However, in the homes of many of these same "fussy" infants, the response was in the expected manner with quiescence and sleep. Little calming was observed in infants over 7 months of age.

During the past two years the Slumber Tone unit has been used in hospital nurseries, doctors' offices and in the home. More than 1,000 infants have been exposed to the Slumber Tone unit and no adverse effects have been reported or observed while the device was in use or after use. Otolaryngologists and psychiatrists have anticipated no untoward auditory or phychic effects. Detail studies are under way to substantiate these impressions. Preliminary EEG studies show normal sleep patterns with infants calmed by Slumber Tone (Figure 2).

Comment

Not all newborns are fussy but most are irritable from time to time. When this progresses to the true fussy baby status, the physician is usually called by the exasperated parents. Possible causes of the fussy baby paroxysms ranging from the baby's gastrointestinal tract to the mother's psyche[1-5] have been postulated elsewhere.

Why does a constant tone effectively calm irritable newborns and infants quickly and harmlessly? Is this a sonic tranquilizer? Industrial medicine has long made us aware of the calming effect of efficient acoustical engineering for environmental control. If such a tone is a tranquilizer, it certainly demonstrates none of the undesirable effects or hazards of drug-induced tranquility. Although sleep is not induced, it usually follows the initial relaxation. This is a normal type of sleep both to external appearance and electroencephalographic pattern (Figure 2).

Does this tone simulate some phase of environmental sound to which the fetus was exposed in a utero? Sound in the amniotic sac may be amplified and transmitted through the fluid medium into the auditory mechanism of the fetus. The uterine souffle and advential sounds may provide a background tone or hum in the aqueous fetal life.

A surge of interest in recording of electrical activity in fetal life along with heart sounds has resulted in numerous reports of fetal phonocardiography, electrocardiography and electroencephalography.[6] Although maternal and intrauterine sounds other than cardiac in origin have been noted as the cause for technical difficulties in recording, little is known of the actual noise or sound level the fetus is exposed to. Investigation of intrauterine sound or noise is in progress.

The Slumber Tones were made available to us by United Medical Products Company, Hopkins, Minnesota.

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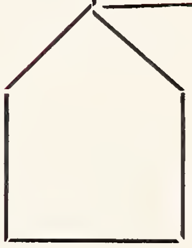
Though this be madness, there is method in it.—Shakespeare.

Malaria is Under attack Around the World



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During the summer of 1960 the author was a research fellow with the World Health Organization (WHO) in the Western Pacific Region. My interest in WHO first began when the 10th World Assembly of the Organization was held in Minneapolis, Minnesota in 1958. I became increasingly interested in the possibility of doing an individual research project concerned with WHO activities as part of my academic work at the University of Minnesota. My ambitions were realized during my junior year and during the following summer I was able to study the Organization.

The purpose of the study was to determine how the benefits of the World Health Organization, as it operates through the governmental agencies, filter down to the local people. In the course of my study I visited the Philippines, where the Regional Headquarters for the Western Pacific Region are located, Viet-Nam, Cambodia, Thailand — in the Southeast Asia Region, Hong Kong, Taiwan, and Japan.

At present, a paper summarizing and analyzing the data collected is being prepared. The scope of the research paper is necessarily quite

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large. I have chosen to limit my comments in this article to the problem of malaria control and eradication as it is being attacked by the World Health Organization in the Western Pacific Region.

Malaria, a disaster with consequences far-reaching and dangerous, is a disgrace to our time. At the 8th World Health Assembly held in Mexico City in 1955 the representatives of governments throughout the world recognized the necessity for undertaking global eradication of malaria. The World Health Organization, WHO, was given charge of the program. Dr. C. A. Alvarado is the Director of the WHO Division of Malaria Eradication. He is the chief of 329 malaria experts now working in 73 countries of the world.

Dr. Alvarado is cognizant of the momentous task confronting the anti-malaria army. He stated, "Malaria eradication is an organizational and administrative problem . . . almost all the scientific aspects of the disease being known." It demands capital. But, according to estimates, the campaign cost for each human being freed from malaria is less than one dollar. The problem is being attacked with confidence and perseverance by countless numbers of teams throughout the world. Obvious benefits can be gained by the success of the programme. To hesitate would "shake people's confidence in the authority and good judgment of those UN departments whose function it is to improve the health of the masses throughout the world. Malaria eradication is indeed a challenge to every country of the world."

In 1960 there were 1200 million humans threatened by malaria, its first victims being children. Dr. M. G. Candau, Director General of WHO, declared that, "there must be no slackening of effort until the last remaining case has been tracked down and cured . . . In this age, when man thinks he is about to set foot on the moon, he should be capable of stamping out one of his worst enemies of his own planet." Accordingly the theme of WHO in 1960 was "Malaria Eradication — A World Challenge."

Countries and territories around the world have accepted eradication as a goal and have been in the process of planning or carrying out anti-malaria activities. In some regions governments have given high priority to the eradication and progress has been impressive. Other governments, although eradication is their goal, lack necessary administration or qualified technical personnel.

WHO has sponsored and coordinated research relating to problems of malaria eradication. Advisory teams for malaria eradication, technical meetings of malaria experts and chiefs of malaria services, malaria training courses, laboratory research, all have been sponsored by the Organization. The Malaria Eradication Special Account, MESA, established at the 8th World Health Assembly in 1955, has partially financed these programmes. Contributions from the United States Government through the International Cooperation Administration, ICA, have greatly augmented the MESA funds.

The World Health Organization has been active in the development and support of malaria eradication in the Western Pacific Region. Extension of technical assistance and advice to malaria programmes has been great. Governments in the Region have been encouraged to change their objectives from control to eradication of the disease. To strengthen services WHO has awarded a number of fellowships in the field of malaria eradication and anti-malaria workers have been given recent new technical information.

In the Western Pacific Region the coordination and cooperation of inter-country programmes has been emphasized. Coordination boards and conferences have been held. Representatives are given an opportunity to share experiences in the planning of operations, and to confer on the administrative and technical aspects of malaria control and eradication.

I was particularly impressed by the efforts being made in the programmes of the Republic of China (Taiwan) and the Philippines. Perhaps an examination of the anti-malaria projects which I observed may further an understanding of the attempts made by WHO to achieve eradication within the Western Pacific Region.

Taiwan, through the use of residual insecticides, is attempting to control and eventually eradicate malaria. The programme is being carried out by the Taiwan Provincial Malaria Research Institute, TAMRI. Affiliated with the Taiwan Provincial Health Administration, the

Institute receives assistance, financially and technically, from a number of international agencies, among them WHO.

I spent a part of my visit in Taiwan at the Institute observing its activities and taking advantage of the research laboratories to learn more about the biological aspects of malaria.

TAMRI has as its responsibilities the investigation necessary for definition of problems and practical means of attack; the training of technicians from local health stations in techniques of control and supervision of field work; and the evaluation of the efficacy of field operations throughout Taiwan.

After World War II malaria was a serious problem, present in almost epidemic proportions on Taiwan. TAMRI was established and work began making malaria and anopheline surveys as well as experimentation on malaria control. Residual spraying of homes, larviciding in rice fields and ditches, and stream flushing were attempted. By 1952 TAMRI was ready to begin an island-wide campaign. Within five years a disease once most devastating became a curiosity, and of little public health importance. Transmission has been stopped in most of the malarious areas. But residual foci of transmission have persisted in the aboriginal villages located in the mountains. I was able to travel to several aboriginal villages where TAMRI was organizing surveillance schemes for detection and elimination of these foci. With the support of these schemes malaria should be completely eradicated from Taiwan within a short time.

The aim of the WHO malaria eradication project in the Philippines is the eradication of malaria through surveillance in areas qualified for the interruption of spraying operations. Transmission of the disease in two-thirds of the population of malarious areas has been stopped by the spraying of these areas and by treatment of cases. Spraying operations are being attempted in difficult mountainous areas and continued in the rest of the country.

Special emphasis has been placed on the Institute of Malariology where the International Malaria Eradication Training Course is conducted. I visited the Institute, a section of the Division of Malaria which trains personnel for malaria work, undertakes research in malaria eradication, and investigates other insect-borne diseases. The International Training Course offers instruction concerned with malaria eradication techniques for senior officers, that is, malariologists, entomologists, and sanitary engineers or sanitarians; and for junior officers of technical grades of anti-malaria workers. During my visit there were participants from the Western Pacific Region and some other Regions taking the courses which were conducted by the Department of Health with assistance from WHO and ICA. The course, at present, is being conducted in English and French.

Theoretical background material is given on the pertinent subjects at the Institute. Modern laboratory and other research facilities, which I was able to observe, are valuable aids to learning the material. The knowledge of the student is further implemented by work in organized field practice. The student is given personal experience in all the types of work carried out by the various workers in a malaria eradication programme. After an orientation to, and actual performance of the work, the student has the opportunity to discuss the subject extensively. Instructors endeavor to include administrative as well as technical aspects involved in field operations.

It is hoped that experience gained in the practical application of theory will enable participants to begin their own malaria eradication programmes in the local situations in which they will become involved.

Thus WHO continues its work towards the ultimate goal of complete world eradication of malaria. Success would be of great significance economically and socially as well as in terms of human health. Projects which were impossible in the past would become a working reality. Arable land as yet untilled could be put to cultivation resulting in increased crop production in many countries where the economy is at sub-standard levels. Natural resources now guarded by the dreaded *Anopheles* would be open to exploitation. But even after having claimed eradication as complete, the work of WHO will not be finished. Complete absence of infection must be a proven fact.

The one basic purpose of WHO, as expressed by its constitution, is to strengthen the national health services so that all peoples of the world may attain the highest possible level of health . . . Health, a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. This objective is being realized in part through malaria eradication — a challenge to the world.

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TUMOR CASE

A sixty-two year old, married, female, librarian was re-admitted to the hospital for a third episode of abdominal pain. The first episode had occurred six months previous to the present admission. X-ray studies of the stomach, gall bladder and colon at that time were considered normal. The attacks began with several loose stools, followed by a steady, boring-type of left upper abdominal pain, which would later become diffuse. The pain would radiate to the back. Nausea and vomiting followed the pain. She was normally chronically constipated, and had noted no change in her bowel habit between episodes. During the attack of pain she obtained some relief by lying down with the thighs flexed on the abdomen. There had been a sixteen pound weight loss in the preceding six months.

Twenty-five years previously she had undergone pelvic surgery for "tumors," and this was followed by x-ray sterilization. Her health had been otherwise well except for several bouts of cystitis.

Her mother and one sister had had carcinoma of the colon.

Examination disclosed a comfortable woman whose temperature was 99.6 degrees Fahrenheit. The only positive findings were in the abdomen. There was an old, well-healed, vertical midline surgical scar. Tenderness of a moderate degree was elicited in the epigastrium and left costovertebral angle. There was also a slightly tender, movable, firm mass, the size of an average orange just below the umbilicus. To bimanual pelvic exam it appeared unrelated to the pelvic structures. The patient stated she had known of a "lump" in this area for "years."

Laboratory studies showed the hemoglobin to be 13.7 gm %, the leucocyte count 12,700 with a normal differential, and the urinalysis to be normal. Blood urea nitrogen, fasting blood sugar, calcium and phosphorus were all normal. The urine amylase was elevated to 800 units. Repeat x-rays of the gall bladder, stomach and colon as well as excretory urogram were considered normal. The patient was discharged on therapy for a presumed subsiding pancreatitis.

One month later she was re-admitted for surgery for the abdominal mass. She had remained asymptomatic at home. At surgery the gall bladder, liver, stomach, pancreas and kidneys appeared normal.

The palpable mass was a tumor in the root of the mesentery to the small bowel near the origin of the branches of the superior mesenteric artery. There were adjacent, enlarged, firm lymph nodes, and a one-and-a-half by two centimeter nodular mass in the wall of the proximal ileum. An extensive small bowel resection was carried out to permit excision of the involved mesentery and a primary anastomosis.

The Pathologist's diagnosis was primary carcinoid tumor of the ileum with large mesenteric metastases.

The patient recovered uneventfully. Initially there were frequent loose bowel movements which eventually returned to near normal. Post operative urine 5-hydroxy-3-indole-acetic acid determinations have remained qualitatively negative.

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1961 Income Tax Guide for Physicians

This article is specifically designed to familiarize you, the Minnesota physician, with the most important tax-saving opportunities which might be available to you, and to point out some of the most troublesome tax problems which ordinarily arise in the conduct of a medical practice. The author points out that this article should not be considered an adequate substitute for the services of professional tax counsel. To begin with, this article is written to inform, not to advise, as the tax laws are subject to uncertain application with respect to certain matters discussed herein. Moreover, the author has in no sense attempted to exhaust the field of income taxation. It is assumed for purposes of this article that you file your income tax returns on the calendar-year basis and that you have been a resident of Minnesota for the full year. Unless the contrary is stated or otherwise indicated, statements herein are applicable for both federal and Minnesota income tax purposes.

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You can save money, perhaps a good deal of money, by spending an extra hour or so on your 1961 federal and Minnesota income tax returns and by taking advantage of numerous tax-saving opportunities available to you.

Within the foregoing frame of reference, this article will achieve its purpose if it provides you with a clearer understanding of your rights and obligations under the 1961 federal and Minnesota income tax laws.

PROFESSIONAL INCOME

Business or professional income and expense are reported on separate forms—federal Schedule C and Minnesota Form M-12. Only business expenses are listed as deductions on these forms. Nonbusiness deductions should be itemized on the federal Form 1040 and Minnesota Form M-1 unless you choose to use the optional standard deduction.

Accounting Method and Professional Income

When a physician files his first income tax return after he has begun private practice he may elect to report his income on either a cash or an accrual basis. Under the cash-basis method, income is taxable only when it is received, and expenses are not deductible until paid. Under the accrual-basis method, income is taxable in the year earned, even if uncollected, and expenses are deductible in the year incurred, even if unpaid. Once an accounting method has been chosen, it may not be changed without the permission of the Commissioner of Internal Revenue.

Professional people usually prefer to use the cash = basis method and to pay tax on collections rather than billings, as professional fees are not always promptly paid and collections are frequently less than billings. If the accrual-basis method is used, bookkeeping adjustments are necessary from time to time to offset accounts receivable which have been included in income but which have proven to be uncollectible.

An advantage of the cash-basis method to the physician is that it provides an element of control over net income. If the year promises to be one of unusually high income, he may limit his income to some extent by postponing some of his billings to the following year, paying all bills for expenses before the end of this year, and buying and paying for professional supplies to be consumed the following year.

If you are a cash-basis taxpayer, you will report only fees actually received. **Fees paid by check are the same as those paid in cash and cannot be deferred as income by holding for deposit until the following year.** If the check is returned by the bank unpaid, the amount of the check is deducted from your income until such time as it may be paid if previously included in your income.

Occasionally you may accept a note, merchandise, or services in payment of a bill. These are includable in your income at fair market value. If a note has been accepted from a patient and its value included in income, you may deduct the amount previously reported in income as a bad debt loss if the note should become worthless.

Gifts that are given to you by a patient in gratitude for or in recognition of medical services which you have actually rendered are actually income to you.

OTHER INCOME

Dividends

For federal income tax purposes your dividend income is tax-free up to $50—or up to $100 if you and your wife each received dividends of $50 or more (as here you and your wife own stocks either jointly or separately). This exclusion must be claimed specifically on your return. In addition, you are entitled to a dividend credit against federal taxes equal to 4% of your dividend income (that is, your dividend income minus your $50 or $100 exemption), or 4% of your taxable income, or your federal income tax as computed without regard to the 4% credit, whichever is least.

Under the new Minnesota income tax law, you enter your federal adjusted gross income as your Minnesota gross income (with certain modifications) on your Minnesota return. Accordingly, if you received dividends and specifically claimed the $50 or $100 dividend exclusion on your federal return, you will, in effect, also receive the $50 or $100 dividend exclusion for Minnesota income tax purposes. There is, however, no dividend credit against Minnesota taxes.

Interest

With few exceptions, interest received during the taxable year is fully includible in gross income. For federal income tax purposes, however, you may exclude from gross income interest received on state and municipal obligations and on United States Treasury bonds issued prior to March 1, 1941, to the extent that the principal of such bonds exceeds $5,000. As a general rule, all interest on United States obligations issued on or after March 1, 1941, is taxable under federal law. For Minnesota income tax purposes, you may exclude interest on all United States obligations and on Minnesota municipal bonds. Interest received on non-Minnesota municipal bonds, however, is included in gross income for Minnesota income tax purposes.

Capital Gains and Losses—Generally

Capital gains and losses are of two classes:

(1) Short-term gains and losses resulting from the sale or exchange of capital assets held 6 months or less. All short-term gains and losses are taken into account at 100% and are combined to determine the net short-term gain or loss.

(2) Net long-term gains and losses resulting from the sale or exchange of capital assets held for more than 6 months are taxable. All long-term gains and losses are similarly taken into account at 100% and are combined to determine the net long-term gain or loss.

Both classes of net gains and losses are then considered together. There are, however, important differences to be observed in computing the taxability of the two classes of gains and losses:

(1) Net short-term gains are taxed in full as ordinary income. Thus, the excess of short-term gains over short-term losses, reduced by the amount of net long-term losses, if any, is added in full to ordinary income and is subject to regular tax rates.

(2) Net long-term gains are taxable for maximum rate of 25%, and under Minnesota law at an approximate maximum rate of 5¼%. Thus, the excess of long-term gains over long-term losses, reduced by the amount of net short-term losses, if any, is taxable for federal income tax purposes by the application of whichever of the following alternative methods results in the smaller tax:

(a) First, add to ordinary income (plus net short-term gains, if any) 50% of the amount by which net long-term gains exceed net short-term losses, if any; then compute the tax. This is the only method permitted under Minnesota law.

(b) Second, make an alternative computation by calculating the tax on ordinary income (in which net short-term gains, if any, have been included); then add thereto 25% of the amount by which net long-term gains exceed net short-term losses, if any. Minnesota law does not provide for this alternative computation. **In practice, unless your taxable income exceeds $18,000 ($24,000 if head of household and $36,000 if a joint return is filed), this alternative computation ordinarily will not result in a smaller federal income tax liability and need not be made.**

(3) Net capital losses—the excess of capital losses over capital gains—whether short-term or long-term, are taken into account at 100% and may be applied up to $1,000 as a deduction from ordinary income for the year. If the capital loss for the year exceeds $1,000, the excess may be carried forward for the 5 next succeeding years to be applied, successively until exhausted, as a short-term capital loss. Thus, until used up within the 5 year period, the "unused" amount is first applied as a short-term loss against the next succeeding year's net short-term gains, if any; then against such year's net long-term gains, if any; then as a deduction from ordinary income in the maximum amount of $1,000 for the year.

Year-end Sales of Stocks and Securities

You may sell stocks or securities up to and including December 29, 1961, in order to establish a loss during 1961. But for purposes of establishing a gain during 1961, the proceeds must be available by the last business day of the year. Thus, cash sales or sales by a taxpayer on the accrual basis may be made up to and including December 29, 1961. Based on the four-business-day delivery rule of New York stock exchanges, however, 1961 gains in listed securities on a "regular" delivery basis must be recorded no later than December 22, 1961, while "sales for next day" delivery may be effected on December 26, 27 and 28, 1961.

Limitations in Establishing Gains or Losses

Although securities sold to establish gains may be repurchased simultaneously, losses are not allowed for tax purposes where you have repurchased or acquired an option to purchase substantially identical securities within 30 days before or after the date of sale. Where a loss on such a "wash sale" is disallowed, the "holding period" is computed as beginning with the date the taxpayer acquired the securities sold; and you compute your costs by adding the amount of the disallowed loss to the cost of the securities when they were repurchased.

Securities Dealt in on a "When-Issued" Basis

Gains or losses from sales, on a "when-issued" basis, of new securities in a tax-free reorganization are probably long-term gains or losses if the old securities were acquired more than 6 months before the date of making the "when-issued" contract. Similarly, they are probably short-term gains or losses if the old securities were acquired not more than 6 months before such date.

Losses Incurred on Worthless Securities

Securities becoming worthless are computed as capital losses to the full amount of capital invested. In computing holding period, such securities are deemed to have been "sold" on the last day of the year in which they become worthless. You are allowed 7 years under federal law and 5 years under Minnesota law within which to file claims for refund or credit resulting from worthless securities.

Capital Gain Dividends

Capital gain dividends, whether in the form of stock, cash, or both, when distributed by a regulated investment company, are treated as long-term capital gains, regardless of the holding period of the shares on which the capital gains dividend has been paid. The cost basis of your shares is not reduced by the amount of such capital gains distribution. If your capital gain dividends are automatically reinvested by the company, such dividends are also treated as long-term capital gains.

However, long-term capital gains dividends not distributed by regulated investment companies are treated as follows: (a) you include in income as long-term capital gains an amount equivalent to your proportionate interest in the company's undistributed capital gains for the year, as designated by the company; (b) you enter in your return, for credit or refund, an amount equal to 25% of the tax paid by the company on the undistributed capital gains included in your income; and (c) you increase the cost basis of your shares by 75% of the amount of undistributed capital gains you have included in income as long-term capital gains.

PROFESSIONAL EXPENSES

Business expenses are the normal current costs of operating a business or professional practice. They are deductible if they are ordinary and necessary expenses directly connected with or related to a business or profession. The term "ordinary" as used in this context refers to an expense which is a common and accepted occurrence within the business or profession. "Necessary" expenses are those expenditures which are appropriate and helpful, even though not absolutely essential. **Expenditures for lobbying or the promoting or defeat of legislation, contributions for political campaigns, and payments which frustrate sharply defined public policy cannot be deducted as ordinary and necessary business expenses.**

If you are a physician in private practice, you are, for income tax purposes, considered to be the proprietor of a business and, as such, are entitled to deduct from your gross income all the ordinary and necessary expenses of your professional services. These deductions, if claimed, must be supported by itemized records and substantiating evidence, since you have the burden of proving their validity. Living costs and personal expenses may not be deducted as business expenses. If an expense is both business and nonbusiness or personal, only the portion attributable to your practice may be deducted as a business expense.

The following is a list of most of the usual business expenses incurred by doctors. To the extent that these expenses are ordinary and necessary in conducting a professional practice, they are deductible on federal Schedule C and Minnesota Form M-12:

Accounting. Fees paid for installing and maintaining an accounting system, bookkeeping, auditing and preparation of tax returns.

Automobile. If you use an automobile in making professional calls, you may deduct the expenses of its operation, including gasoline, oil, greasing, washing and polishing, antifreeze, garage rent, license fees, depreciation, insurance premiums, uncompensated casualty and collision damages, interest on installment purchase, repairs, parking fees, towing charges, bridge and highway tolls. You are not, however, entitled to a business expense deduction for such expenses as are attributable to (1) driving to the office, to a hospital, or to a patient's home directly from your home in the morning, or (2) returning home at the end of the day. Therefore, even though you might own an automobile which is used solely in connection with your medical practice, it would be improper to claim a deduction for all of the expenses attributable to its operation.

Bad Debts. If you are on the cash basis, then, as noted above, uncollectible debts are never included in your income. If you are on an accrual basis, however, bad debts may be deducted either as a direct charge-off when they occur, or by setting up a reserve for anticipated bad debts and deducting reasonable additions to that reserve. Thus, the bad debt reserve method permits a deduction even before the debt has become bad. If you write off and deduct actual bad debts, you must deduct them in the year the debts become fully worthless. But there is an option covering partially worthless bad debts. Instead of waiting for the debt to become entirely bad, you can deduct the worthless portion in any year in which you write it off, so long as the debt is not completely worthless. This option permits you to choose the year for deducting partially worthless business bad debts.

Bank Charges. Service charges for maintaining professional bank account.

Casualty Losses. Loss by fire, flood, theft, sudden deterioration, or other casualty of property used in professional practice, to the extent not compensated by insurance.

Collection Fees. Fees paid to collection agencies and attorneys for collecting delinquent professional accounts.

Conventions. Costs incurred in attending conventions directly related to professional practice such as registration fees, meals and lodging, tips, baggage charges, and transportation.

Damages. Payment of damage claims or judgments, including litigation expenses, arising out of professional activities.

Depreciation. Annual allowance to recover cost of professional property having a useful life of more than one year and established in accordance with a predetermined, reasonably consistent plan. The aggregate of the amounts allowable each year plus the salvage value remaining, if any, will at the end of the useful life of the property equal its cost. Examples of depreciable property include that portion of an automobile devoted to professional practice, X-ray equipment, office furniture and surgical instruments.

Dues. Physicians may deduct expenses of membership in local, state or national medical professional organizations. Also deductible is a proportionate part of your membership expenses in belonging to clubs, service organizations, and chambers of commerce, to the extent that your membership is for the purpose of increasing your professional income. This does not include expenses of your wife in an auxiliary society, since her membership is not for the direct purpose of enhancing your professional income.

Education. Expenses incurred in attending "refresher" courses of short duration which are intended to keep you, as a practicing phsyician, abreast of current developments in your area of competence and which do not in the eyes of the Government offer academic credit are deductible.

Entertainment. Costs incurred as a means of enhancing your medical practice, such as the entertainment of doctors who refer patients, and similar expenditures to attract and retain patients, Records should be maintained showing the dates, places, and events, the names of guests, the amounts expended and the business benefit derived or reasonably expected to be derived.

Flowers. Cost of flowers for the reception room, as well as flowers for patients and funeral wreaths, providing such costs are incurred for a business reason and not in fulfillment of a social or personal obligation.

Gifts. Gifts to employees, hospital attendants, nurses, and patients for business rather than personal reasons. You would do well to be prepared to show by detailed records the names of recipients, the amounts expended, and the likelihood of business benefit.

Insurance. Premiums on policies written in connection with professional practice, such as professional liability, public liability, embezzlement, and insurance on professional property are deductible. But this does not include premiums on disability or life insurance policies.

Interest. Interest on indebtedness arising out of professional practice, such as the purchase of equipment or a building used for an office is allowed as a deduction.

Laundry. Cost of laundering or renting towels, surgical gowns and linens used in professional practice.

Leasehold improvements. Cost of improving or remodeling your office may be amortized over the useful life of the improvements or the remaining period of the lease, whichever is shorter.

Legal. You may deduct expenses in connection with earning professional income, such as collecting delinquent accounts or defending a professional liability suit. Costs incurred in connection with an unsuccessful defense of a criminal or license revocation proceeding are not deductible. Also deductible are legal fees paid in connection with tax advice or with the preparation of income tax returns.

Fees. Fees for narcotics and annual doctor's licenses are deductible.

Magazines and Books. Cost of professional journals, and magazines and newspapers for the reception room; also the cost of books that have only temporary value (generally a year or less). Does not include reference books having a more or less permanent value which should be depreciated, as with other capital assets, over their useful life.

Maintenance. Costs such as electricity, gas, heating fuel, water, repairs, cleaning, painting and decorating.

Medical Supplies. Drugs, chemicals, dressings, vaccines, and items such as clinical thermometers which have a normal life of not more than one year.

Moving. Costs incurred in transferring a professional practice to a new office location.

Office Supplies. Stationery, printed forms, postage, pens, pencils, and similar items.

Rent. Paid in leasing equipment or office space. If your residence is also used as a bona-fide office, the portion of the rental reasonably attributable to office space is deductible.

Repairs. Costs incidental to keeping professional property in an ordinary, efficient operating condition, such as fixing broken furniture and equipment and restoring an air conditioning unit to operation.

Residence. Reasonable proration of rental, taxes, mortgage interest, utilities, janitor expenses, various type of insurance, and repairs if an office or a bona-fide second office is located in your residence.

Salaries. Paid to nurses, technicians, secretaries, and assistants, including employer's payroll taxes. Also proportionate part of wages paid to servant who cleans both office and residence. Includes bona-fide wages paid to a dependent child for services as chauffeur, receptionist, and so forth, but the cost of meals and lodging for the child are not deductible.

Taxes. Personal property and real estate taxes levied on property used in professional practice; occupation taxes or taxes on gross receipts from professional practice; sales and use taxes on purchases of supplies and equipment; and employer's payroll taxes. Minnesota and federal gasoline taxes and federal excise taxes imposed upon you and paid in connection with your professional practice, are deductible as part of the cost of the item.

Telephone. Expenses incurred for office telephone and professional telephone calls made from residence or elsewhere; also telephone answering service.

Travel. Expenses in attending professional meetings and visiting patients, such as transportation, baggage charges, and the cost of meals if "away from home" (overnight trip). Costs of personal or vacation travel are not deductible, even though an incidental business purpose may be served. Travel expenses of your wife in accompanying you to professional meetings are not deductible, even though she may perform some incidental useful services.

Uniforms. If not suitable for other than professional usage and if necessary for reasons of custom or sanitation.

DEPRECIATION

The cost of medical equipment, office furniture, buildings, and other property with a useful life of more than one year may not be deducted in full in the year of purchase as an expense.

However, if property such as office furniture has a useful life of limited duration which can be determined or estimated, a pro rata portion of the cost may be deducted each year over the estimated useful life of the asset to you. The cost of an asset which does not have a limited useful life, such as radium, land or goodwill, may not be recovered by depreciation.

A reasonable allowance may be deducted each year, as depreciation, for the exhaustion, wear and tear, and obsolescence of depreciable property used in business, professional practice, or held for the production of income. In this way, the cost of depreciable property, less the salvage value, may be recovered over the period of its estimated useful life.

Any reasonable method which is consistently applied may be used in computing depreciation, but no asset may be depreciated below a reasonable salvage value under any method. The four methods of computing depreciation most widely used are (1) the straight-line method, (2) the 150% declining-balance method, (3) the 200% declining-balance method, and (4) the sum-of-the-years'-digits methods.

Straight-line method. Under the straight-line method, the cost or other basis of an asset less its estimated salvage value is deductible in equal annual amounts over the period of the estimated useful life of the asset to the taxpayer. The allowance for depreciaion for the taxable year is determined under this method by dividing the cost or other basis of the property at the beginning of the taxable year, less salvage value, by the remaining useful life of the property at such time. Because the straight-line **rate** is important in determining maximum rates permissible under certain other methods of computing depreciation, the following formula can be used to compute the depreciation allowance for the taxable year using the straight-line method:

Annual depreciation = (Cost or other basis = salvage) (Useful life in years/100).

If, therefore, an asset has an estimated useful life of 10 years, the applicable straight-line rate would be 10%.

150% declining-balance method. This method is of somewhat limited availability. It may be employed only with respect to new or used property acquired prior to 1954 or used property acquired after 1953 and only if either permission to use this method has been granted by the Commissioner of Internal Revenue, or the method was elected by a new taxable entity in an initial return or was elected in the first return filed in which depreciation was sustained. Under this method, a rate equal to one-and-one-half times the applicable straight-line rate is applied each year to the undepreciated cost or other basis of the asset and is computed without regard to salvage value. Thus,

Annual depreciation = Undepreciated cost or other basis (Straight-line rate x 1.5)

The rate determined under this method will be applied each year until the undepreciated cost or other basis of the asset is reduced to salvage value.

With respect to new tangible property with a useful life to you of three years or more, you generally may use either of the two methods described above, or any of the following:

200% declining-balance method. Under this method, a rate equal to twice the applicable straight-line rate is applied to the undepreciated cost or other basis of an asset and is computed without regard to salvage value. Moreover, the depreciation must stop when the remaining undepreciated balance is reduced to salvage value. The following formula may be used to compute annual depreciation under this method:

Annual depreciation = Undepreciated cost or other basis (Straight-line rate x 2)

Sum-of-the-years'-digits method. Under this method of computing depreciation, annual deductions for depreciation are computed by applying changing fractions to the cost or other basis of the asset, reduced by estimated salvage. The numerator of the fraction changes each year to a number which corresponds to the remaining useful life of the property, and the denominator, which remains constant, is the sum of all the years' digits corresponding to the estimated useful life of the asset. Thus, if an X-ray machine has a 10-year useful life, the annual deduction for depreciation under this method would be computed as follows:

First year's depreciation = (Cost or other basis —salvage 10/55

Second year's depreciation = (Cost or other basis —salvage) 9/55

Third year's depreciation = (Cost or other basis —salvage) 8/55, etc.

The deduction for depreciation may also be based upon any other method, consistently employed, which does not produce a larger aggregate depreciation during the first two-thirds of the asset's useful life than the 200% declining-balance method.

20% first-year depreciation. A flat 20% of the cost of new or used assets (other than buildings) purchased after December 31, 1957, with an estimated useful life of six years or more can be deducted in the year of purchase regardless of how long the asset was held during the year. This special deduction is available on only $10,000 of annual property purchases for single taxpayers or a married taxpayer filing a separate return, or $20,000 for married taxpayers filing a joint return. In addition to 20% first-year depreciation, the remaining cost of an asset may be depreciated by means of any of the other methods for which the asset qualifies. When using this method of depreciation, you must show as a separate item the additional 20% first-year depreciation claimed with respect to each asset selected.

To illustrate the foregoing, suppose that on January 3, 1961, you purchased a new X-ray machine for $10,000 with an estimated useful life of 10 years and with an estimated salvage value of $1,000. Since the machine is new and was purchased subsequent to 1954, the 150% declining-balance method of computing depreciation will not be available unless permission to use this method has been granted by the Commissioner of Internal Revenue. The following sets forth the amount of depreciation which may be deducted for the year 1961 under each of the methods discussed above assuming that you elect to take the 20% first-year depreciation:

20% first-year depreciation:

1961 depreciation = Cost or other basis x 20%

1961 depreciation = $10,000 x 20%

1961 depreciation = $2,000, plus

Straight-line method:

1961 depreciation = (Cost or other basis—salvage) (Useful life in years/100)

1961 depreciation = ($10,000—2,000—1,000) (10/100)

1961 depreciation = $7,000 x 10%

1961 depreciation = $700, or

150% declining-balance method (if permission has been granted):

1961 depreciation = Unrecovered cost or other basis (Straight-line rate x 1.5)

1961 depreciation = ($10,000—2,000) (10% x 1.5)

1961 depreciation = $8,000 x 15%

1961 depreciation = $1,200, or

200% declining-balance method:
1961 depreciation = Unrecovered cost or other basis (Straight-line rate x 2)
1961 depreciation = ($10,000-2,000) (10% x 2)
1961 depreciation = $8,000 x 20%
1961 depreciation = $4,000, or

Sum-of-the-years'-digits method:
1961 depreciation = (Cost or other basic —salvage) (1961 digit/sum of years' digits)
1962 depreciation = $10,000—2,000—1,000 (10/55)
1961 depreciation = $7,000 x 10/55
1961 depreciation = $1,272.73.

If you are presently employing one method of computing depreciation then, with one exception, you may not change to any other method without securing the permission of the Commissioner of Internal Revenue. For this purpose, any change in the percentage of the current straight-line rate under the declining-balance method, as for example, from 200% of the straight-line rate to any other percentage of the straight-line rate, will constitute a change in method of computing depreciation and will require the consent of the Commissioner. You may, however, change from the declining-balance method to the straight-line method without first securing the Commissioner's permission if you attach a detailed statement to your return. The change in method must relate to the entire taxable year in which the change is made and be used for all subsequent years unless, with the consent of the Commissioner, another change is permitted.

Travel and Transportation

Traveling and transportation expenses which are ordinary and necessary to the conduct of your medical practice or employment are deductible. The cost of meals and lodging incident to such travel is deductible only if you are away from home overnight. An employee should deduct his actual transportation and traveling expenses from his compensation in computing his gross income. Any allowances or reimbursements which he may receive for such expenses must be added to his compensation. If you are in practice for yourself, you should deduct such expenses on federal Schedule C and Minnesota Form M-12.

If you claim a deduction for traveling expenses you should attach to your return a statement showing (1) the nature of your business or employment, (2) the number of days away from home on business, (3) the total amount expended for meals and lodging, and (4) the total amount of other expenses incident to the travel and claimed as a deduction.

Entertainment expenses are not considered a part of the cost of traveling, even though the expenses are incurred while you are away from home. However, as indicated above, entertainment expenses in some instances may qualify as business expenses if they are incurred as ordinary and necessary expenses of your practice.

Travel expenses must be directly attributable to your employment or professional practice and necessary to the conduct of it. These facts must be established in the statement accompanying your return when the deduction is claimed. **Traveling expenses, even though designated for business purposes, will not be allowed if it appears that the trip was intended to be for personal pleasure or vacation purposes.**

If, therefore, your wife accompanies you on a business trip or to a business convention the portion of the expenses attributable to her travel, meals, and lodging are not deductible, unless it is established that her presence was necessary and served a bona-fide business purpose. Doctors cannot ordinarily provide such proof. Incidental services such as typing notes, assisting in entertaining and so forth, are not sufficient to warrant the deduction.

The expenses of travel to another city to seek or to accept other employment are not deductible. Neither are the traveling expenses incurred in seeking a new location in another city for a doctor's office.

Expenses for commuting between your residence and your office are non-deductible, regardless of the distance or whether the transportation is private or commercial.

Expenses for Education

Expenditures for your education are generally personal and not deductible. However, the cost of education, including research activities, is deductible as an ordinary business expense where the education is undertaken primary (1) to maintain or to improve skills required in your employment or profession, or (2) to meet the express requirements of your employer or the requirements of applicable law or regulations imposed as a condition to your retention—and not acquisition—of your status, salary or employment. **Thus, educational expenses qualify as deductions only if they are for education of a "refresher" or similar type necessary to maintain the skills required of you in your field of practice.** Educational expenses include tuition fees, the cost of books and similar items, laboratory fees, meals and lodging, and travel and transportation expenses.

You are allowed to deduct educational expenses only if you are employed or otherwise engaged in a profession during the period of the education. Furthermore, educational expenses are deductible only if the minimum requirements for qualification for your particular employment or for the practice of your profession have already been met. The Internal Revenue Service says that the skills "required" in a taxpayer's employment are those which are "appropriate, helpful, or needed." Thus, according to the Service, education which is "customary" for established members of the taxpayer's business or profession occupying positions similar to that of the taxpayer is considered to be required to maintain or to improve "required" skills.

The Tax Court Ruling of the United States, on the other hand, has emphasized the taxpayer's "primary purpose" for the education. Because the question whether educational expenses are deductible is largely a question of fact, it is appropriate to point up the difference in points of view held by the Internal Revenue Service and by the Tax Court.

A physician specializing in internal medicine had engaged in practice for three or four years, then embarked upon a two-year specialized course in analysis and techniques of psychiatry and deducting his expenditures for such education. As many physicians, he employed some psychiatric methods in the diagnosis and treatment of patients. Also, at the time of the hearing before the Tax Court, he was still specializing in internal medicine. The Commissioner of Internal Revenue disallowed deduction of the education expenses on the ground that they were not "customary." The Tax Court reversed the determination, saying that it was not "absolutely necessary that customariness be established." The Court put stress upon the "primary purpose" of the education and, pointing out that the physician continued to practice as an internist, held that the "primary purpose" of the special courses in psychiatry was to "maintain and improve his skills" as an internist rather than to allow the physician to become a specialist in psychiatry.

In the same connection, it should be pointed out that in March, 1961, a federal court of appeals held that an already qualified psychiatrist could not deduct the cost of a course he took in order to become a psychoanalyst. The court pointed out that while psychoanalysis is not formally recognized as a specialty by the American Medical Association, it is so regarded by a large body of medical opinion without whose approval it could not be successfully practiced. It, therefore, was held that the psychiatrist's expenses were incurred in qualifying for a specialty and were not deductible. The Supreme Court has been asked to review this decision.

Entertainment and Gifts

Because expenditures for entertainment and gifts are ordinarily social or personal expenses, you have the burden of establishing that such expenditures are reasonable in amount and have a direct relationship to the conduct of your profession and that business benefit is reasonably to be expected. You must be prepared to support your entertainment expenses with a record of whom you entertained, your professional relationship to such persons, and the extent to which you did in fact supplement your professional earnings through such persons.

Under the prevailing rule, the costs incurred by a professional man in entertaining clients or patients are ordinarily not deductible in full, because a portion of the expense is usually attributable to himself or to his family. Consequently, only that portion of your entertainment cost which is different from or in excess of the amount you would ordinarily spend for personal purposes is deductible.

Club Dues

A professional man may deduct his club dues if he can show that he joined the club to meet people for business reasons, and that the people he met were a source of profit to him. To be allowed as a business deduction, the relationship between club expenses and business income must be apparent and convincing. Ordinarily, only a part of the cost of dues to a social club is allowed as a deduction.

The cost of acquiring membership in a club is to be distinguished from annual, monthly, or other periodic dues. For the original cost is a capital expenditure, and is not deductible in the year paid. Nonetheless, the cost of club memberships may not, as differentiated from many capital expenditures, be amortized over a period of years.

Home Entertainment

The cost of business entertaining in the home is a deductible expense, including the cost of food, drink, catering services, flowers, and of hiring servants for the occasion. In the event of a tax examination the Internal Revenue Service is likely to require submission of strict proof, such as a list of the persons entertained, their connection with your practice, and how they increased the earnings from your practice. The Service contends that the cost of entertaining business guests at home is deductible as a business expense only to the extent of any additional expense by reason of their presence. If they bring their wives along, the position is taken that "it is doubtful whether any part of the total expense incurred would be deductible." The Service apparently regards such affairs as mere social gatherings among friends, and too remotely connected with business in the usual case to allow a deduction.

Where reciprocal entertaining is involved, as where a group of professional or business acquaintances take turns picking up each other's entertainment checks without regard to whether or not any business purposes are served, the expenses are of a personal nature and are not deductible.

Gifts

With respect to Christmas gifts exchanged between business associates, the Internal Revenue Service says that unless the taxpayer includes the fair market value of the gift he receives in income, he cannot deduct the costs of the gifts he sends to his associates.

In the absence of **adequate records** to substantiate expenses incurred, any deduction for such expenses will be in jeopardy. Detailed records should be maintained and preserved as to dates, places, and events, the name of guests, the amounts expended, and the business benefit derived or reasonably expected to be derived. These records should be supported, wherever possible, by cancelled checks, receipts, statements, or similar evidence. However, it is not necessarily true that these expenses will be disallowed merely because you do not have complete documentary evidence which will establish a precise amount. But approximations will be considered by the Internal Revenue Service only when three requirements have been met: (1) it must appear that some expense was actually incurred; (2) the expense claimed must be so related to your business or profession that it qualifies as an ordinary and necessary business expense; and (3) a basis for approximation must be constructed from available evidence both as to the amount and the business purpose of the expenditure claimed.

Declarations And Returns

Minnesota law, unlike federal law, does not provide for income-splitting between husband and wife; that is, married taxpayers receive no tax advantage by filing joint Minnesota returns. In fact, where a husband and wife each have net income taxable in Minnesota it will be to their distinct advantage to file separate Minnesota returns. For in the usual case where a husband and wife both receive income, the husband is in a substantially higher income tax bracket than is his wife. Consequently, the effect of filing joint returns under such circumstances is that the wife's income is normally taxed at a higher rate than it otherwise would be, and, perhaps, the income of the husband is taxed at a higher rate than it would be without taking into account his wife's income.

It, therefore, would be to your advantage to file separate Minnesota returns if—

(1) You or your wife received dividends on stock or securities owned separately or jointly;

(2) You or your wife realized capital gains on the sale of stock or securities owned separately;

(3) You or your wife received (or had credited to interest on bonds owned separately or jointy or on a separate or joint savings account; or

(4) You or your wife received any income from any other property owed separately or jointly.

In the instances listed above where your wife receives income with respect to property which she owns separately, she should list such income on a separate return. Where you both receive income with respect to property owned jointly, and the income is deposited in a joint bank account, is otherwise available for your and her use, or is used to purchase other property owned by you jointly, your wife may report 50% of such income on a separate return. If it is to your advantage to do so, your wife may also claim those deductions which she is entitled to claim individually, or 50% of the amounts representing deductible sums paid from joint funds, or both. In the situation where your wife has capital losses for the year in excess of her other income, it, of course, would be to your advantage to file a joint Minnesota return thereby offsetting a portion of your income with such losses.

Declarations of Estimated Income Taxes

Under federal law, you are required to file, on or before April 15, 1962, a declaration of estimated income tax (Form 1040-ES) if your estimated 1962 federal income tax can reasonably be expected to exceed federal income taxes withheld during 1962 by $40 or more, and if (a) your 1962 federal gross income can reasonably be expected to include more than $200 from sources other than wages; or (b) your 1962 federal gross income can reasonably be expected to exceed (1) $5,000 if you are single but not the head of a household or a surviving spouse, or if you are married, file a joint return with your wife, and your combined gross income can reasonably be expected to exceed $10,000, or (2) $10,000 if you are the head of a household or a surviving spouse.

Under the new Minnesota income tax law, you are required to file, on or before December 15, 1961 on form M-14, a declaration of your estimated 1961 Minnesota income tax (taking into account the 75% "forgiveness" provision) and to include therewith the full amount of estimated tax due if it can reasonably be expected to exceed by $20 or more the sum of your allowable credits and 1961 Minnesota income taxes withheld, and if (a) your 1961 Minnesota gross income can reasonably be expected to include more than $200 from sources other than wages upon which Minnesota income taxes will be withheld; and (b) your 1961 Minnesota gross income can reasonably be expected to exceed (1) $750 if you are single, or (2) $1,500 if you are married, file a joint return with your wife, and the gross income is yours or both yours and your wife's.

Filling Out Returns

At least one final point should be mentioned about filling out your returns and accompanying schedules, if any: keep them neat. Avoid forcing an agent to labor over a sloppy return. And make a copy for your records to use as a starting point next year. Your past returns should provide an excellent source of ideas.

(To be continued in January)

Abstracts and Briefs

HEADACHES

The incidence of abnormal electroencephalograms in patients with migraine headache is greater than that found in the normal population and greater than that in patients with unselected types of headache.

The EEG abnormalities in migraine fall into several categories. The first category consists of those electroencephalograms performed during the headache-free period and which show a persistent and non-focal abnormality. The genesis of this disturbance is not known but a relationship to epileptic phenomena has been suggested by some but without any other clearly scientific basis than the EEG.

The second broad category of electroencephalographic abnormalities consists of those with focal abnormalities. In some, the electroencephalographic abnormality is very brief and is seen only during an attack of headache; this appears to be the result of short-lived ischemia owing to vascular constriction at the onset of the attack.

In others, an electroencephalographic abnormality develops during an attack and is persistent, and is associated usually with defects in motor or sensory function and is presumed to be the result of local brain edema.

A third focal abnormality is that which occurs during a headache-free period and occurs most commonly in patients having conspicuous neurologic abnormalities; it is presumed that cerebral infarction is the underlying abnormality.

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"Studies on Headache" Walter A. Kamp and Harold G. Wolff: Arch. Neurol. 4:475, May, 1961.

MIDCALF AMPUTATION FOR PERIPHERAL VASCULAR DISEASE

An above knee site is commonly selected for amputation of a gangrenous or arterially insufficient leg. This preference is in spite of the accepted fact that a midcalf amputation provides a more functional limb, less stump pain, and a lower operative mortality.

These authors studied 52 amputations to determine applicability of midcalf amputation for arterial insufficiency and to investigate parameters which could aid in the predictability of primary healing.

Over a 10 year period 63 amputations were done midcalf. Only those done for arterial insufficiency and closed primarily were included in the study. There were 52 such amputations, 42 unilateral and 5 bilateral. The major symptom was gangrene in 24, ischemic ulcer in 23, and foot pain in 5.

The results were: 75 per cent successful healing; higher amputation necessary in 19 per cent; and a 6 per cent mortality.

No correlation was found between the presence of diabetes mellitus and the probability of healing; and x-ray evidence of osteomyelitis distally did not influence the result. There was correlation between the incidence of failure and the absence of popliteal pulse and of calf oscillometrics. However 2 such cases went on to successful healing. The use of antibiotics decreased the indication for open guillotine procedure.

A logical approach to the patient with a warm calf and no skin changes at the midcalf site is to initiate the procedure at that level and evaluate the vascular supply during operation. If the muscle is viable and there is brisk bleeding the closed midcalf operation can be completed. If on the other hand the vascular supply is tenuous, an above knee amputation can be done without delay.

GORDON C. MacRAE, M.D.
Duluth, Minnesota

Harris, P. D., Schwart, S. I., and DeWeese, J. A. "Midcalf Amputation for Peripheral Vascular Disease." Archives of Surgery 82:381-383 March, 1961.

SURGICAL SYNDACTYLIA

The authors present a method of creating syndactylism of deformed toes in order to correct deformities and remove certain pressure areas. This skinplasty may be performed alone or in conjunction with bony procedures such as partial removal of phalanges or metatarsal heads.

The authors further compare this surgical syndactylia with the congential syndactylia where no web spaces are present. It is well known that such conditions cause no difficulty in function of the foot. Many excellent illustrations demonstrate the type of deformity in which this treatment is useful. It includes clawing of the toes, overlapping of the fifth toe on the fourth, hammer toe, and clavus between the fourth and fifth toes. Since the surgery is essentially soft tissue surgery, the healing period is short. Most associated bony surgery is that of excision so that one need not wait for bone healing for function of the foot. The dorsal skinplasty is performed so that there appears to be a cleavage between the toes. The plantar surface is less well demonstrated.

This approach is a relatively simple one which may serve as both preventive and corrective measure against the deformities involving the toes and cutaneous lesions of the web space between the toes. It affords acceptable cosmetic results, brief convalescence and early ambulation.

KENATH SPONSEL
Minneapolis, Minnesota

H. Kelikian, M. D., L. Clayton, M. D., & H. Loseff, M. D., Clinical Orthopaedics, Vo. 19-1961, pages 208-231.

PERFORATED DUODENAL DIVERTICULUM

Although duodenal diverticula are not uncommon they rarely require surgical treatment. The majority are harmless and a conservative attitude toward them should be the general rule.

Most duodenal diverticula cause no symptoms at all but are occasionally associated with non-specific nausea, vomiting, epigastric pain, belching, constipation or weight loss. Other causes should always be excluded before attributing them to a duodenal diverticulum. Occasionally, however, a duodenal diverticulum may become inflamed, cause obstruction, hemorrhage, or even contain tumor tissue. The authors report a case of an inflamed duodenal diverticulum which perforated and was successfully managed surgically.

A review of the literature reveals 22 other cases of perforations in this lesion. The mortality rate of 48 per cent attests to the severity of this complication. The differential includes perforated ulcer, acute cholecystitis or pancreatitis, intestinal obstruction, nephrolithiasis and even myocardial infarction. The lack of specific diagnostic manifestations and the evidence of an abdominal catastrophe will ordinarily result in abdominal exploration. The retroperitoneal edema and bile staining will usually lead to the correct diagnosis at surgery.

The diagnosis was made in only three cases preoperatively and was missed in five cases at surgery. The high mortality was usually associated with delayed surgery due to inability to establish a diagnosis.

Suggested management of the perforated duodenal diverticulum includes excision of the diverticulum, allowing sufficient cuff at the base for adequate inverting closure with non-absorbable sutures and without tension. The vital proximity of the pancreas, common duct, and ampulla of Vater require delicate handling in the dissection. Choledochotomy or anterior duodenotomy may be necessary to aid identification of some of these structures. Complemental suction gastrostomy and feeding jejunostomy may be helpful adjuncts. The retroperitoneal area should be adequately drained.

The emphasis on surgical conservatism for the usual duodenal diverticulum is well placed. It is probable that more harm may be expected from unwarranted interference with duodenal diverticula mistakenly blamed for symptoms due to other conditions than from the rare instance of delayed recognition and treatment of the diverticulum with complications.

ROBERT N. HAMMERSTROM. M.D.
Minneapolis, Minnesota

"Duodenal Diverticulitis with Perforation" Zeifer, H. D. and Goersch, H. Archives of Surgery 82:746, May, 1961.

BRUCELLOSIS OF BONES AND JOINTS

When other obvious causes for inflammation of the skeletal system or synovia are not evident, brucellosis should be considered.

Thirty-six patients were studied in which the diagnosis of brucellosis was established. An agglutination titer 1:800 was considered to be presumptive evidence of brucellosis.

Spondylitis accounting for back pain simulating intervertebral disc degeneration associated with inflammation was the most common manifestation. Osteomyelitis, osteoporosis, synovitis, bursitis and a cystic lesion in the humerus were also reported.

All of the individuals were farmers or had worked where farm animals were prevalent.

Except in the spondylitis patients, surgical treatment in combination with tetracycline and streptomycin was the most common form of treatment. Under this type of management, most of the cases were found to be cured at the end of one year.

In the case of synovitis, antibiotic medication and immobilization provided benefit. Synovectomy was used in one instance. Those suffering from bursitis obtained excellent results from excision of the bursa plus the use of antibacterial agents.

The authors emphasize the importance of considering this diagnosis in farmers suffering from bone or joint symptoms when other causes for these symptoms cannot be identified.

J. H. STRICKLER, M. D.
Minneapolis, Minnesota

Kelly, Patrick J., Martin, William J., Shirger, Alexander and Weed, Lyle A.: "Brucellosis of the Bones and Joints." Journal of the American Medical Association 174:347, 1960.

NEW SURGICAL THEORY ON PEPTIC ULCER

Because of a high rate of recurrence of ulcer following suture closure of perforation and a growing trend toward definitive operation at the time of perforation, the authors assessed their own cases in a search for a decision on treatment of choice.

About half of 146 cases followed after perforation closure were complete treatment failures. They found that where symptoms prior to perforation were classified as severe only 11 per cent were essentially well in follow-up. Another factor influencing outcome was that of the appearance of the ulcer at time of exploration for closure. When the surgeon noted an unfavorable appearance, i.e., large size, marked induration, etc. only 13 per cent were well in the postsuture closure follow-up. Prognosis was particularly bad in those who had ulcer complications before perforation.

Whereas the perforation closure mortality was only 2.3 per cent, they concluded that the peritonitis of the perforation during the first twelve hours was largely chemical and, if contamination was minimal, the time limit could be extended. Therefore, it was considered safe to perform more extensive surgery than simple closure in the earlier periods.

The authors proposed a vagotomy and pyloroplasty as being a safer and simpler substitute for gastrectomy as a definite procedure and felt that the indication for definitive operation might be extended when the lesser operation was chosen.

Concern in regard to the possibility of mediastinitis from exploration for the vagus nerve seemed unfounded since in their experience of sixteen vagotomies for perforation no mediastinitis developed.

Vagotomy pyloroplasty appears to have a sound physiologic basis and, if the test of time indicates a high cure rate, this procedure may replace gastrectomy for duodenal ulcer. However, this series is neither large enough nor follows long enough to draw any specific conclusions in regard to this procedure for the largest number of their vagotomy pyloroplasty cases have been followed only about fifteen months.

J. H. STRICKLER, M.D.
Minneapolis, Minnesota

"Reappraisal of Simple Suture of Acute Perforated Peptic Ulcer: Indications for Definitive Operation." Phil J. Harbrecht, M.D., Joseph E. Hamilton, M.D., Dept. of Surgery, University of Louisville: Annals of Surgery 152:1044, Dec. 1960.

President's Letter

EVERYONE SHOULD BE PRESIDENT

Every member of the Minnesota State Medical Association should have the opportunity to serve as President.

I know this is impossible, of course, but the experience gained in this post would make any doctor a better member and physician. In the course of a year the contacts which the presidency affords create friendships of lasting character with individuals from those of the highest aeschalon in our national organization to the almost-forgotten loyal doctor, hidden away in the smallest society of our Association.

Through the banquet circuit, and through participation in activities with the para-medical groups, the President broadens his understanding of their goals and problems. Due to his presidential post, he is asked by high-ranking governmental officials to represent the doctors of his state on various commissions. When introduced at various public functions, he is honored by expressions which he knows go far beyond the acknowledgment of his presence there, or whatever esteem-they may hold him in as a person. He begins to realize that to lay groups and others, he represents the medical profession; its traditions; its accomplishes; its doctors. He must, and should, act accordingly. He must show the public that the public relations image of the individual doctor is not transformed, or polluted by his membership in the American Medical Association.

All these acknowledgments are wonderful, and stimulating to his vanity. However, as President he will receive the most satisfaction from noting the dedication to the Association and to medicine displayed by segments of the membership. Perhaps they all would be evangelists if they had the opportunity.

It seems, in visiting the societies that the atmosphere of each society, based on attendance and interest, is about equal. Dedicated members make up about a third of the membership; apathy seems to consume another third; and the remaining third do not seem to be society-minded or were perhaps critical of the present leadership. The key to renewing the interest of the membership in the activities of our Society seems therefore to lie on the awakening of the apathetic, and delegating responsibilities to those who are critical and dissatisfied.

It indeed has been a stimulating and educational year. As this December issue signals the last of my letters to you, I wish to express my sincere thanks to the members of our State office staff for their valuable cooperation and the aid which they have given me in these past twelve months.

I also wish to extend to all the members, officers, and staff of our Association, the sincere greetings of the Holiday Season. With that wish also goes my earnest desire "that everyone of you could be President."

C. L. Oppegaard

C. L. Oppegaard, M.D.
President
Minnesota State Medical Association

Editorials

SOME NOTES ON THE PRESENT STATUS OF MINNESOTA OBSTETRICS AND GYNECOLOGY

Some time ago, a request was made for a brief discussion of the development of Obstetrics and Gynecology in the past. This was produced and published. What is going on in this field at present in Minnesota is perhaps of more interest. This will be limited by available space to a few notes, including a few complaints and a few congratulations, on the teaching, the organization and the practical results in present day Minnesota in Obstetrics and Gynecology.

Undergraduate teaching has changed radically and for the better. The emphasis has swung from teaching to the encouragement of learning. Lectures have been largely replaced by carefully supervised contact with patients, related reading and seminars, the object of which is to stimulate curiosity in the student. It is fair to say that the student is now turned out with infinitely better intellectual equipment than was given to those of us of a previous generation. The preparation of Minnesota students in the high schools and colleges, however, leaves much to be desired. Improvement here is urgently needed and might be expected to pay large dividends.

Post graduate (as distinguished from graduate) teaching includes a wide range of activities which cannot be discussed here. The Minnesota Obstetrical-Gynecological Society was revamped many years ago by a group of dedicated people and their influence is still felt. It is a friendly group and has had an effective influence on the standards of practice in the state. What is important is that its members have accepted responsibility for standards in their local areas and have applied it well.

The post graduate teaching at the Continuation Center at the University has produced odd features. The men who attend these are of first rate quality. But these are the ones who need it least. At least half of the registrants are from other states. This makes the meetings stimulating experiences for the teachers but one wonders if the basic purpose is being achieved.

Graduate training in Obstetrics and Gynecology has had a new burst of activity. It must be clear to all concerned that the voluntary hospital has an essential part to play in graduate teaching. There are simply not enough places in the universities and larger clinics to supply the demands for training in any graduate field. The problem has been to get and keep adequate standards in the voluntary hospitals so that they offer a real teaching experience. Too many of them have used the graduate student simply for service. About three years ago the three certifying agencies in Obstetrics and Gynecology, the A.M.A., the American College of Surgeons and the American Board of Obstetrics and Gynecology, placed the responsibility for control of graduate teaching institutions in the hands of a single group, now known as the Residency Review Committee. It has changed the requirements for certification for the better, has discontinued the one year certifications, and will shortly do away with two year training certificates as well. Preceptorship training was discontinued long ago. This has stimulated teaching hospitals to improve their standards, their outpatient departments, and the organization of their graduate teaching activities so that they may qualify for three year certification. It has taken the wraps off a considerable number of young and effective teachers. There is every reason to believe that this will improve the efficiency of practice in the hospitals concerned and that there will emerge an increased number of adequately trained specialists. More voluntary hospitals must accept this responsibility to use effectively their qualified staffs and to contribute to the training of those who will follow us. Minnesota has already gained from this.

Perhaps the most satisfying features of Minnesota Obstetrics and Gynecology have come from the work of the Maternal Mortality Committee. The death rate in this state from obstetric causes has dropped to about 2 per 10,000 live births and the total maternal mortality (including non-obstetric deaths) to about 4. This is about 1/15 of the death rate of 25 years ago. What is particularly pleasing is that the preventable mortality rate has dropped from 75% in the early 1940's to a recent year when it was 10%. It is obvious that a great many factors have played a part in this but one of these has undoubtedly been the actual investigation of all maternal deaths and the use of the information so obtained. What part other factors played can be argued but there is no argument as to who did it. The general practitioner cares for the vast majority of the pregnant women in Minnesota and he has increased his carefulness, knowledge, and sense of responsibility to a remarkably satisfying degree. The specialist has been the student, the teacher, and, often enough, the goad. There is justification here for pride but not for complacency. Similar work is to be done with the newborn and the activities in the gynecologic field. Altogether things seem to be in reasonably decent shape in Obstetrics in Minnesota.

JOHN L. McKELVEY, M.D.
Dept. of Obstetrics and Gynecology
University of Minnesota Medical School

TATTOOS—THEIR VALUE

The king upon his throne the aborigine, business man, sailor, soldier or criminal, the good and bad may be tattooed. From antiquity to the present one finds many professors of tattoos. Tattoos have played a major role in the lives of human beings but their value, until recently, has not been appraised.

On a clear, cold day in January 1959 a nurse had returned from the grocery to her apartment when the doorbell rang. On answering the door a young man stating he was a vacuum cleaner salesman, forced his way into the apartment. He produced a gun and forced her to disrobe, photographed her in the nude with her own camera and raped her. Before the assault he removed his topcoat and jacket. He was wearing a short sleeve shirt and gloves. He did not remove his gloves. The victim noticed a tattoo with the name Bill on his left forearm. The rapist stole her money and fled. During the investigation which followed, the victim was asked to review the Cincinnati Police Division's "tattoo" file. Photographs of five individuals with the name Bill on the left forearm fitting the description given by the complainant were shown. She was shown the photographs and without hesitation selected one photograph as picturing her assailant. He was arrested and confessed the crime four hours after it was committed—thanks to a tattoo.

A second case involved a homicide victim in Hickory Flats, Mississippi. On October 29, 1958, the body of a young man, who used the alias of Robert Lee Fields, was found by a farmer partially submerged in the water of a creek bed. The victim had been dead from four to six weeks and his body was badly decomposed. Decomposition was so advanced that valuable ridges remained on only two fingers. Some legible tattoos were present on his arms, which vultures and insects had not molested.

During the investigation a suspect was arrested. The Federal Bureau of Investigation entered the case when the suspect fled the state of Mississippi. A federal warrant for unlawful flight was issued. In their investigation the F.B.I. could not establish positive proof of the victim's identity. The Agent in Charge of the Cincinnati F.B.I. office, being aware of the tattoo file maintained by the Cincinnati Police Division, sent an agent to our office on March 13, 1959. Checking the tattoo file for the types of tattoos listed on the victim, the initials AE were listed in the file under the name other than the one used by the victim. With this information, the necessary data was forwarded to Washington and when comparison was made of the victim's partial fingerprints on file his true name was revealed—thanks again to a tattoo.

These cases demonstrate the value of tattoos and the need for their proper filing for use by police agencies. They also indicate their potential value to other accredited individuals in related fields. Psychiatrists, psychologists and medical doctors can and do secure valuable data from the study of tattoos and their significance.

Referring to case number one, I will mention the other tattoos on this man's body as well as their positions on his body. The subject by wearing gloves during his criminal act retained a clue. It was later found that he had the names Donna on the back of his right hand and Gail on the back of his left hand, and the name Bill on his left forearm. It was the "Bill" that led to his apprehension. The names Donna and Gail indicate the subject's attempt to show that he is a lady's man or to recall his association with the girls of those names with whom he had some sexual satisfaction, or perhaps a plain case of "puppy" love. The name Bill is an identification symbol and indicates the subject's egocentricity.

In the second case the following tattoos were found on the victim: AE, Crossed swords, Dad, Mom, Eagle, Snake through the eye of a skull, Cross, Heart, Mother. Here again, AE shows the subject's egocentricity and was a means of identification. The crossed swords indicated he was in the Cavalry branch of the Army, which fact was established. He also had been in trouble while in the Service. Dad and Mom indicate his home life was not the best, even though he desired love and affection. The Eagle could indicate masculinity or be decorative. The Snake through the eye of a skull would indicate a symbol of evil cunning with a brutal urge. The Cross, Heart, Mother tattoos, indications of love, are also philosophical in their connotation.

First, a word on the value of tattoos to a police agency. As a police officer, interested in identification, I concluded that the listing of tattoos into a workable file would prove of great value: a) as a means of identifying injured or dead persons in catastrophes when fingerprints cannot be found due to burned members of the body or if the subject had never been fingerprinted. Had a tattoo file been available in the area of the Texas City, Texas, disaster more bodies would have been identified; b) as an aid in identifying lost or missing persons and amnesia or homicide victims; c) as an adjunct to fingerprints, tattoos tend to differentiate persons in a descriptive way, such as, branch of armed service, numbers, names, initials, locale of birth, egocentricity of subject, age groups and group emblems; d) as a means of identification at crime scenes and of wanted persons; and e) as a reference for agencies other than police.

Second, of what value are tattoos to psychiatrists, psychologists and medical doctors? Not a member of the medical profession or its allied branches I am able, only as a layman, to delve into the technical aspects of this subject. I do believe, however, that great results may be evolved from the profession's study of tattoos. In the psychiatric diagnosis of a disturbed individual a competent person could ascertain the motivation, thus assuring proper treatment and/or adjustment.

The members of the Clinic staff of the Psychiatric Clinic of our Municipal Court have made the following observations: the Cincinnati Police Division and the Psychiatric Clinic are interested in tattoos for different reasons. The Police Division keeps a file on tattoos as an aid to identification, while the Psychiatric Clinic of the Municipal Court has on occasion found them useful as an aid in personality diagnosis and evaluation.

Probably the interest in tattoos on the part of mental health workers lies in the assumption that people who tattoo their bodies are more likely to exhibit psychopathology, with the corollary that unstable individuals are more likely to commit anti-social and criminal acts. Criminals thus are more likely to be tattooed. This is not always true. There are many situations in which relatively normal, stable persons may become tattooed. Group pressures in military service, fraternities, and other all-male groups may require tatooing, usually in a gang, and such experiences may represent an isolated phase of a person's youth. These are regretted later. Prostitutes in some areas persuade customers to become tattooed because of the commissions they receive.

The presence of multiple tattoos suggests several possibilities to the alert psychologist or psychiatrist. The significance of tattoos on women is even more suggestive of severe maladjustment. The verification of these areas is made through depth interviewing, psychological testing, and inquiry into past history, including police records. Some of the personality characteristics which may be present in heavily tattooed individuals include:

(1) **Pseudomasculinity.** Many inadequate men with passive and effeminate traits make strenuous attempts to hide such traits from public view. Tattoos may become the "protective cover" to persuade themselves and others that they are really supermasculine. Tattoos so used go along with mustaches and beards, black leather jackets with studs, cowboy boots, excessive and ostentatious interest in athletic feats, guns and fast automobiles. While there is nothing wrong per se in such activities, it is the exhibitionistic use of such devices by the inadequate man to compensate for his hidden weaknesses that marks the pseudomasculine person.

The most blatant use of tatooing in a pseudomasculine manner was the case of a young man repeatedly arrested for fighting in bars, who had his penis painfully tattooed with the words, "Fluid Drive" and a picture of a snake. This patient described himself as a "Don Juan" but became quite anxious when questioned closely about the degree of intimacy he permitted himself with women. He was found to be starting fights because he interpreted chance remarks made by his friends as slurs on his manhood and/or as homosexual overtures.

(2) **Latent homosexuality.** The circumstance under which many tattoos are acquired, while in military service, prisons, or gangs, suggest the latent homosexual content of many relationships of tattooed men. Psychoanalysts have commented upon the act of tattooing iself. The painful injection of dye under the skin with a pointed object by another man is a sadomasochistic act with disguised homosexual implications. The large number of names of "buddies" tattooed indicate that the person receives most of his companionship from men and finds himself most interested in the camaraderie of men. The possible exception is "Mom."

(3) **Reaction formation against sadistic, rebellious and sexual temptations.** The man who has his wife's or girl friend's name tattooed on him is probably advertising that he means to be "permanently" true to them. This is analogous to a man wearing a wedding ring to establish his married status. This extreme method of tattooing to demonstrate his loyalty raises the question of whether he is "protesting too much." A man who resorts to such measures to assure himself and the world of his loyalty must be easily tempted.

Similarly, "Mom" and "Dad" tattoos may sometimes suggest that the parents actually neglected and scorned the child. The child reacted by burying his resentment in order to gain acceptance in the family. His tattoos are a demonstration that he still loves his parents but conceals his real anger at them.

"Death before dishonor" is another fairly common mark among military personnel. One study revealed that **every** person found with such a tattoo had been cashiered out of the service under dishonorable or undesirable conditions. Here is graphic evidence of the struggle of rebellious men to control their angry impulses unsuccessfully. The "death before dishonor" tattoo is a desperate attempt to reassure themselves and to "hold the line" against the temptation of disobedience and rebellion.

(4) **Symbolic defiance of social conformity.** These people try to fight their rebellious impulses by inscribing themselves with the behavior code they wish they could emulate. Others defiantly emblazon themselves as a gesture against social conformity. The spread of the famous "pachuco" tattoos in the web of the hand is a symbol of criminal allegiance against society's codes.

(5) **Maladjusted.** A person who feels insecure is more likely to seek tattooing as a means of finding individuality.

The above observations are personal impressions gained from a small sample. The socioeconomic class meaning of tattoos may be an important modifying factor. The meaning of a tattoo on an upper middle class boy might be more important than the same tattoo in a social group where tattooing was common.

In tattooing there is usually strong motivation. Through studies by eminent criminologists and experiments by institutions and individuals it appears there is often a direct correlation between criminality and the type of personality illustrated by the tattoos. According to Lombroso, the famous Italian criminologist, tattooing is a reversion to the savage instinct in the criminal himself. There is often a sadistic or masochistic basis for the tattoo. It is interesting to note tattooing increases during armed conflicts. In penal institutions the number of inmates carrying tattoos has increased as has the incidence of "home-made" tattoos.

It is gratifying to know that some penal institutions have taken steps to correct this practice and that others inflict severe penalties upon inmates who are tattooed while incarcerated. From a personal point of view, I can usually ascertain when he enters our office whether or not a person has been incarcerated in a penal institution by the presence of numerous tattoos.

Why does an individual have his skin punctured with a sharp instrument and stained with pigment. After personal observations, interrogation of individuals, research and generous advice from experts in their particular vocations at least one of the following factors has been noted in each of the cases studied:

1. Personal identification.
2. An erotic or decorative reason.
3. Homosexuality or substitution for certain desires, usually sexual.

4. Expression of contempt for law and order.
5. A form of human vanity.
6. Philosophical, patriotic or religious purposes.
7. Non-verbal form of communication.
8. A menomic reason—to assist the memory.
9. Birth locale.
10. Membership in a gang or secret society.
11. Age-old customs and certain beliefs.
12. On a dare.
13. Idleness.
14. While under influence of alcohol, drugs or opiates.
15. Criminal speciality.
16. Therapeutic reasons.
17. Incurment of pain.
18. Vocations.
19. Equality with older criminal associates.
20. Previous commitment to penal or correctional institution.
21. Love-Hatred.
22. Adornment.

I wish to emphasize the important nature of tattoos to everyone reading this article. The notorious gangsters of yesterday have been carriers of tattoos, as are those of today. Tattoos are a device in measuring trends, a guide for certain individuals from teenage to death. We, as professional men and public servants, can do much by studying tattoos and the individuals who wear them.

Other police agencies have seen the need for filing tattoos for the main purpose of identification. The Los Angeles, California, Police Department which has an extremely excellent tattoo file containing approximately 100,000 designs, is realizing great results through its use. The following police agencies are in the process of establishing tattoo files: Constabulary, New Brunswick, British Columbia; Sheriff's Office, Nueces County, Corpus Christi, Texas; Sheriff's Office, Clark County, Las Vegas, Nevada; Sioux City, Iowa, Police Department; Cleveland, Ohio, Police Department; Fostoria, Ohio, Police Department; and Richmond, Virginia, Police Department. It is the writer's hope that other authorized agencies will establish such bureaus.

EUGENE M. TOWNLEY
Identification Officer
Police Division
Cincinnati, Ohio

It is interesting to note that this past month the New York City Department of Health has ordered the closing of the city's eight tattoo parlors.

Since 1959 there have been thirty cases of Serum Hepatitis that have been as a result of tattooing. Thirteen of the city's 1,529 cases for the year 1961 appeared to be on the basis of tattoo needles.

Dr. Samuel Adelman, Health Commissioner of Chicago, has announced recently that the Board of Health inspectors have been checking tattoo establishments and that tighter supervision concerning proper sterilization of instruments are being considered.

The Editors

SHOULD WE NIBBLE?

If one wishes to be philosophical it might be suggested that the physiologic absorptive mechanism of the human gastro-intestinal tract was surely not conceived with a built-in ter-in-dium feeding schedule in mind. In the primitive state feeding was more or less continuous as the aboriginal man hunted and ate his food as he found it. Except for the social graces, continuous feeding might actually be more physiologic; in peptic ulcer a modified form of nibbling has been used with a considerable amount of success.

Experience on comparable groups of chickens has shown that meal eaters exhibited twice the serum cholesterol levels and seven times the severity of coronary atherosclerosis seen in the nibblers. Furthermore, in order to examine the effects of these two eating habits on the regression of athrosclerosis, the observation on chickens showed that regular two hour meals were associated with a slower rate of decline in the serum cholesterol and a decreased rate of healing of coronary lesions than was evident when the chickens were allowed to nibble all day. (Cohen-Claren Medical Research Institute, Chicago Circulat. Res. No. 9:1961)

One might speculate that the intermittent feedings schedule of civilized man with its tidal flushing and gastric acidity might also be a factor to account for some of the stomach diseases that are peculiar to our organiezd civilization. Nibbling may have its value.

CARL O RICE, M.D.
Minneapolis, Minnesota

PR

Carl H. Woyke
Editor

FACTS AND FALLACIES ABOUT YOUR AMA

For more than a decade a number of fallacies about the American Medical Association have appeared in the press, in speeches, or have been aired on radio and television. Most of these false statements have been written or spoken because of misunderstanding, misinformation, or lack of knowledge about the A.M.A.

Here in a bundle are the most persistent fallacies about the A.M.A.—and the facts:

FALLACY: The A.M.A. opposed Blue Cross when it was first proposed.

FACT: The A.M.A. has **never** opposed voluntary health insurance for nearly half a century. In the 1930s, the AMA's House of Delegates expressed displeasure at projects then being developed in which physicians were hired by a third party and their services sold at a profit.

FALLACY: The AMA opposed the Social Security Act in 1935 when it was adopted.

FACT: The AMA testified before Congress on only one section of the legislation—the section calling for extended public health services. The AMA supported that section. The AMA objects to using the Social Security Act as a vehicle for imposing a compulsory national health scheme on the American people.

FALLACY: The AMA is always "against" everything and never "for" anything.

FACT: The record shows AMA often suggested public health legislation 10 years before it became law. The AMA through the years has been against a lot of things—anything which in the collective judgment of the physicians who are the AMA would retard the advancement of medicine, would damage the quality of medical care in America or would hinder or destroy the free practice of medicine. Nevertheless, the AMA has been for much more than it has been against. Medical progress proves it and so does the congressional record. The Kerr-Mills Medical Aid for the Aged Law passed by Congress last year is one of the many measures supported by the AMA. In the 85th Congress, 700 bills affecting medicine directly or indirectly were introduced. The AMA testified on 28 measures, supporting 19 and opposing 6. Testimony on the others was purely informational. More than 700 such bills were introduced in the 86th Congress. The AMA submitted 43 statements on 25 bills. Only 6 statements on 4 bills were in opposition, 11 were informational, and 26 were in support of legislation.

FALLACY: AMA exercises "strong sanctions against individual doctors who speak up" against AMA policy.

FACT: The inference is drawn that the AMA punishes any member who dares expound an opposing political view. "Strong sanctions" implies that the AMA disciplines such contrariness by squeezing the offender out of hospitals or by some similar interference with his professional freedom. The change is singularly ridiculous. Devotion to individual liberty against government collectivism is the very core of their opposition to socialized medicine. And yet, the charge suggests that physicians, through the AMA, impose a tyranny of the majority over their fellow men. It's absurd. The AMA, in fact, possesses no such disciplinary power. It can't even punish a member for unethical conduct by anything more severe than cancellation of membership.

FALLACY: The AMA is a closed corporation (or conversely, a strong union) to which every physician is forced to belong and which controls the supply of doctors in this country.

FACT: The AMA long has been identified with efforts to increase the number of qualified physicians in the United States. It has developed a scholarship and loan underwriting program designed to encourage and make possible enrollment of more bright young men and women in medical schools. The AMA has objected, in the interest of safeguarding the nation's health, to admitting to practice in this country those doctors of foreign countries who cannot pass the examinations required of the graduates of American medical schools. Any physician who is a member in good standing of his state medical society may become a member of AMA. Present AMA membership includes some 180,000 physicians, approximately 70% of the nation's 249,000 licensed doctors.

FALLACY: The AMA is ruled by a small clique of doctors.

FACT: Policies are adopted by the House of Delegates and carried out by an elected Board of Trustees. The House of Delegates is composed of physicians elected by members of state medical societies to represent them. Membership in the House of Delegates, which is the policy-making, governing body of the AMA, changes from year to year. In the past three years, the House has had a turnover of 78 members—about 36%. In addition to the 216-member House, between 700 and 800 physicians, representing every section of the country, serve each year on AMA committees and councils.

FALLACY: The AMA is against old people and the poor.

FACT: American medicine and its allied professions have given to the citizens of this country, old and young, rich and poor, the best medical care anywhere on earth. Our doctors are aware of their professional responsibility to the young, the middle-aged and the elderly, and in discharging their responsibility annually dispense more than $658 million of free medical care. AMA supported with vigor, and still does, the Kerr-Mills Law for medical aid to the needy and near-needy elderly, believing that law to be the best vehicle for caring for the aged within the framework of democracy. During 1961 physicians have worked to help implement the law and already thousands of the nation's elderly are being benefited by Kerr-Mills legislation enacted by the states. Officials of the AMA and of medical societies across the country have stated many times that no one in the United States need go without medical care because he is poor.

FALLACY: The AMA should not be mixed up in politics.

FACT: The AMA did not start the political contest in which it is engaged. Medicine has two choices—it can quit the contest it did not start and accept socialized medicine, or it can continue to fight to preserve the free practice of medicine with its benefits to patient and physician. It's that simple.

FALLACY: Doctors oppose the social security approach to medical care only because it would hurt their pocketbooks.

FACT: Congressman Walter H. Judd (R., Minn.) said, "most doctors would be quite as well off under socialized medicine from a financial standpoint as they are now. The best doctors can always make a go of it under whatever system, and the mediocre ones might be better off. So our opposition is not on a personal basis. It is because we are sure that the public at large would be worse off and our country would be worse. Therefore in good conscience we have to oppose some of these proposals while doing our level best to help find alternatives that will provide the right answer."

Minnesota Blue Shield

During the past year, leaders of organized medicine have called for a positive, constructive program of action to halt the Federal Government's encroachments on private medical care. They have repeatedly urged stepped-up efforts to fulfill medical-economic needs through voluntary channels as a means of reducing the pressures for tax-supported schemes.

In the challenging days ahead, it should be remembered that Blue Shield provides an already functioning mechanism, directly responsive to doctors of medicine, through which many of these needs can be fulfilled.

It will be recalled that Blue Shield was founded during an economic depression which threatened the breakdown of the traditional patient-physician relationship. During that period of crisis Blue Shield met the needs of the times by affording a means of relieving medical-economic hardship without interfering with the private and personal practice of medicine.

Though economic conditions have improved enormously since those early days, other types of social and political pressure now endanger the freedoms of the doctor of medicine and the patient he serves. And, once again, Blue Shield is prepared to help the physician meet the challenge of the times.

The Minnesota Blue Shield plan has consistently demonstrated leadership in instituting timely improvements and expansions of coverage which meet the changing needs of the participating physician and the subscriber.

The Senior Citizen Plan, one of the first and one of the most liberal Blue Shield contracts for persons 65 years of age and over, is, of course, one example. New plans, offering larger medical care allowances and qualifying more subscribers for service benefits, are now in the final stages of development.

In the future, Blue Shield will continue to respond to the demands of the times as it carries on the mission of serving as the medical-economic ally of the profession. But though profound and far-reaching changes may be affected in the specific terms of coverage, the basic concept of Blue Shield—which is based on responsibility and responsiveness to the doctor of medicine—will remain unchanged.

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E. M. Pepper, M. D., New York, N. Y.—*Anesthesiology*
Edward P. Cawley, M. D., Charlottesville, Va.—*Dermatology*
Julian M. Ruffin, M. D., Durham, N. C.—*Gastroenterology*
Carroll L. Witten, M. D., Louisville, Ky.—*General Practice*
Howard J. Jones, Jr., M. D., Baltimore, Md.—*Gynecology*
Thomas M. Durant, M. D., Philadelphia, Pa.—*Internal Medicine*
Maxwell M. Wintrobe, M. D., Salt Lake City, Utah—*Internal Med.*
Bernard J. Alpers, M. D., Philadelphia, Pa.—*Neurology*
Ralph C. Benson, M. D., Portland, Ore.—*Obstetrics*
Victor A. Byrnes, M. D., St. Petersburg, Fla.—*Ophthalmology*
John H. Moe, M. D., Minneapolis, Minn.—*Orthopedic Surgery*
Albert C. Furstenberg, M. D., Ann Arbor, Mich.—*Otolaryngology*
Jeff Minckler, M. D., Denver, Colo.—*Pathology*
Lewis L. Coriell, M. D., Camden, N. J.—*Pediatrics*
Robert D. Moreton, M. D., Fort Worth, Texas—*Radiology*
John H. Mulholland, M. D., New York, N. Y.—*Surgery*
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For information concerning the Assembly meeting and the tour write Secretary, Room 105, 1430 Tulane Ave., New Orleans 12, La.

Meetings and Announcements

JANUARY-1962

International Medical Assembly of Southwest Texas will hold its 26th Annual Session in San Antonio, Texas, January 29-31, 1962 at the Granada Hotel. Contact: S. E. Cockrell, Exec. Secretary.

The International Medical Congress and the University of Southern California will hold its First Inter-American Conference on Congenital Defects at the Statler Hotel, Los Angeles, January 22-24. Contact: Stanley E. Henwood, IMC-New York.

Ramsey County Medical Society and the Ramsey County Chapter of the American Academy of General Practice will sponsor a medical symposium, Lowry Hotel, January 8. Contact: Dr. William Watson, 261 Midway Medical Arts, St. Paul.

American College of Surgeons Meeting, January 29, 30, 31, February 1. The Statler-Hilton and The Biltmore Hotels, Los Angeles. Contact: American College of Surgeons, Chicago.

Mayo Clinic and Mayo Foundation postgraduate course on "Clinical Rheumatology" on January 22, 23, and 24. Contact: M. G. Brataas, Mayo Clinic, Rochester.

FEBRUARY

International Medical Legal Society Seminar in Honolulu, Hawaii, February 17-24. Contact: Wm. P. Hauser, M. D., IMLS, Tacoma, Washington.

Illinois Association for Maternal and Infant Health Sixth Congress February 7, 8, 9 at the St. Nicholas Hotel, Springfield. Contact: Mrs. Patricia Dorr, IAM&IH, Chicago.

New York University Medical Center Symposium on Infertility on February 8, 9, 10. Contact: Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York, New York.

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MARCH

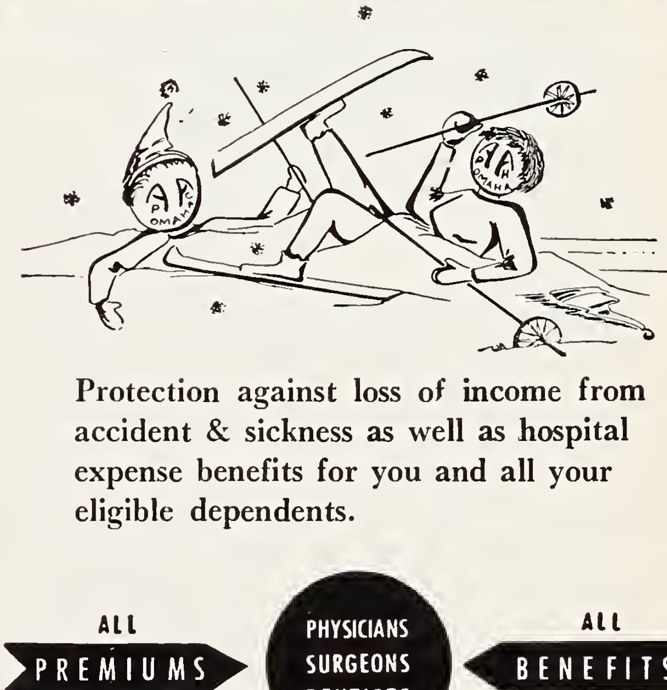
New Orleans Graduate Medical Assembly Meeting March 12, 13, 14 and 15 at the Roosevelt Hotel, New Orleans. Contact: Office of the Assembly, 1430 Tulane Avenue, New Orleans.

American College of Surgeons Three-Day Sectional Meeting, Detroit, March 5-7, Sheraton-Cadillac Hotel. Contact: American College of Surgeons, Chicago. Also, three-day Section Meeting, Memphis, Tennessee, March 26-28, Hotel Peabody.

ANNOUNCEMENTS

Examinations for appointment of physicians as Medical Officers in Regular Corps of U. S. Public Health Service Commissioned Corps. February 13, 14, 15. Application forms can be obtained from Surgeon General, U. S. Public Health Service (P), Washington 25, D. C. no later than January 5, 1962.

University of Colorado School of Medicine General Practice Review, January 7-13, Denver, Colorado. Write School of Medicine, 4200 East Ninth, Denver.



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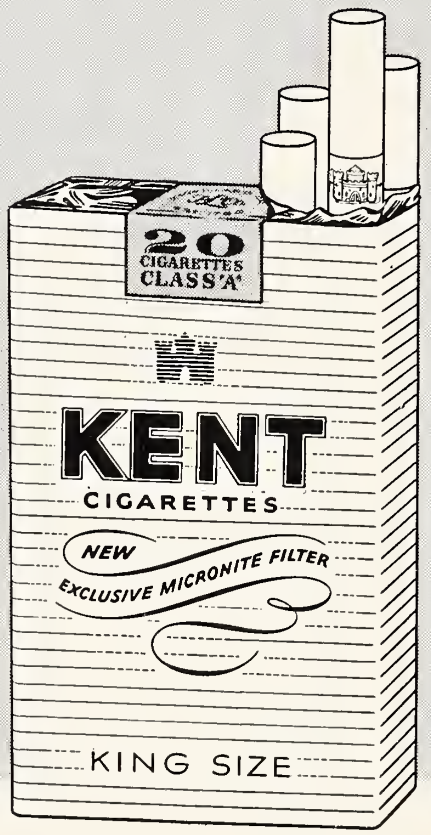

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* * *

Deadline for applications for students, interns and residents to have scientific exhibits shown at convention of Student American Medical Association, May 9-13, in Washington, D.C. File applications with SAMA Headquarters, 430 No. Michigan, Chicago.

* * *

Former students of George E. Fahr, Professor Emeritus at the University of Minnesota are arranging a celebration January 27 in honor of his 80th birthday. Festivities are open to medical public. Contact: Dr. Arthur Kerkhof, 78 South 9th, Minneapolis.

* * *

Scholarship courses in rehabilitation nursing will be conducted at Kenny Rehabilitation Institute, Minneapolis: January 15-February 2; March 5-23; April 23-May 11; June 11-29; July 30-August 17; September 10-28; October 22-November 9; November 26-December 14.

* * *

American Diabetes Association will hold Postgraduate Course "Diabetes in Review" January 17, 18, 19 in Detroit and Ann Arbor. Write: American Diabetes Association, New York.

* * *

The American Thoracic Society invites submission of abstracts of papers relating to field of tuberculosis and other respiratory diseases for presentation at its 57th Annual Meeting in Miami Beach, Florida, May 20-23, 1962. Abstracts must be in hands of committee not later than January 5, 1962. Contact: Asher Marks, M.D., American Thoracic Society, 1790 Broadway, New York.

* * *

The American Thyroid Association again offers the Van Meter Prize Award of $500 which will be made at the annual meeting of the association in New Orleans, Louisiana, May 9-12, 1962. Essays should be sent to Theodore Winship, M. D., 430 N. Michigan Avenue, Chicago not later than January 1, 1962.

* * *

Next scheduled examination (Part 1) written of American Board of Obstetrics and Gynecology will be held in various cities on Friday, January 5. Current bulletins may be obtained from Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland, Ohio.

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In Memoriam

EDGAR DWIGHT BROWN

Dr. Edgar Dwight Brown, 92, died August 21, 1961, in Paynesville after several months' illness.

He was born in Albion, New York, and received his M.D. degree at Western Reserve University at Cleveland, Ohio, and his Ph.D. at the University of Chicago. Dr. Brown first practiced medicine in Cleveland and came to Minneapolis and organized the department of pharmacology at the University of Minnesota where he was a professor of Pharmacology until his retirement in 1937.

Dr. Brown was a member of the Unitarian Church and the Knights of Pythias. He was the first secretary of the Pharmaceutical Society and of the American Society for Pharmacology and Experiment Therapeutics. He was a member of the Hennepin County Medical Society, Minnesota State Medical Association, and the American Medical Association.

He is survived by two sons and one daughter.

BEN SOMMERS

Dr. Ben Sommers, 51, prominent St. Paul internist was stricken with a heart attack while teaching a class at Ancker Hospital and died on October 18.

He was born in St. Paul and was a graduate of Harvard University. He received his degree in medicine from the University of Minnesota.

Dr. Sommers was a fellow of the American College of Cardiology, a member of the American Heart Association, American Diabetes Association, American Federation of Clinical Research, Minnesota Heart Association, and Minnesota Society for Study of Diseases of Heart and Circulation. He was also a member of the Ramsey County Medical Society, Minnesota State Medical Association and American Medical Association. Other professional affiliations included the American Therapeutic Society, American College of Chest Physicians, Minnesota Club and the Somerset Country Club.

He was an assistant clinical professor of medicine at the University of Minnesota, a member of the staffs of Miller, St. Luke's and Ancker hospitals and was an electrocardiographer at Ancker and St. Lukes.

Dr. Sommers is survived by his wife and four children.

GEORGE L. KING

Dr. George L. King, 66, of Hudson, Wisconsin, died October 31, after several months' illness.

He was born at Chippewa Falls, Wisconsin, and graduated from the University of Minnesota Medical School. He practiced medicine in St. Paul for twenty-five years before retiring in 1950.

Dr. King was formerly chief of staff in St. John's Hospital. He was a member of the Ramsey County Medical Society, Minnesota State Medical Association, and American Medical Association. He was also associated with the Masonic Lodge and Osman Temple Shrine.

Dr. King is survived by his wife and one son.

BERTRAM S. ADAMS

Dr. Bertram S. Adams, 86, pioneer Mesabi Iron Range physician and former president of the Minnesota State Medical Association died November 3, after several years' illness.

A graduate of the University of Minnesota school of medicine, he first practiced in Biwabik. He moved to Hibbing in 1902 and founded the Adams Hospital and Clinic.

Dr. Adams was a "50 Club" member, a member of the St. Louis County Medical Association where he served as president, the Minnesota State Medical Association, and the American Medical Association. He was a member of the American College of Surgeons, served as president of the Range Medical Association, a member of Sigma Nu Medical Fraternity, one of the founders of the ecurity tate Bank of Hibbing, and a 33 degree Mason. Dr. Adams was a past grand master of the Minnesota Grand Lodge, past grand patron of O.E.S., past venerable master of Scottish Rite, and served as organist for the Scottish Rite for many years. He was a member of the Shrine, Knights Templers, and a past grand sovereign of the Red Cross of Constantine.

Dr. Adams, a native of Racine, Wisconsin, spent his boyhood years in Lisbon, North Dakota. He is survived by his wife, four daughters and a son.

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Physician's Diary

Dr. Herbert S. Strait of Lakeview Clinic, Waconia attended the recent 11th annual Minnesota Academy of General Practice Meeting held in Minneapolis in September.

* * *

Dr. William Wellman, Department of Medicine, Mayo Clinic, spoke at the recent dinner meeting of the Southwestern Minnesota Medical Society and Auxiliary on "Antibiotics, Staphylococcic Infections." The Auxiliary meeting was held in the home of **Dr. and Mrs. P. W. Harrison. Dr. R. W. Koucky,** Minneapolis also spoke at the Society's meeting.

* * *

Dr. C. J. Mock of the Lenont-Peterson Clinic, Virginia, attended the Annual Clinical Congress of the American College of Surgeons in Chicago.

* * *

Dr. Ralph T. Knight, professor emeritus of anesthesiology at the University of Minnesota, received the distinguished service award from the American Society of Anesthesiologists at its meeting in Los Angeles. The Ralph T. Knight Anesthesiology Research Laboratory was dedicated in his honor at the University last February.

SAFE AS AMERICA
U.S. SAVINGS BONDS

Dr. Felix McParland of Minneapolis spoke at the Freeborn County Medical Society Meeting in October. **Doctors S. A. Whitson, M. O. Nesheim** and **Arlo Blumer** were named to the Civil Defense Committee of the Society.

* * *

Dr. R. Rosenthal, Dr. R. McCormack, and **Dr. W. D. Brown** of the Twin Cities participated on a panel which discussed medical problems at the recent Loafers, Inc. meeting.

* * *

Dr. Bryon H. Armstrong recently terminated his part-time association with the Mankato Clinic. He will be at his Hopkins office full time.

* * *

Dr. Donald E. Wohlrabe of Springfield recently was inducted as a fellow in the American College of Surgeons.

* * *

Dr. I. M. Prlina, urologist with the East Range Clinic, Virginia, was elected to membership in the North Central Section of the American Urological Association in September.

* * *

Dr. James T. Priestley, head of a section of surgery at the Mayo Clinic, received in Chicago the annual Award for Distinguished Service of the Hawthorne Surgical Society at the University of Pennsylvania Graduate School of Medicine.

* * *

The Interstate Clinic, Red Wing, announced that **Dr. George E. Jackish** is now associated with it as a specialist in internal medicine. **Dr. W. R. Miller** left the clinic to assume medical directorship of the Wilder Foundation Institute in St. Paul. **Dr. Ralph R. Rayner,** St. Paul, joined the clinic in November.

* * *

Dr. Claude F. Dixon of Rochester attended the Greater University Fund Advisory Board Meeting of the University of Kansas.

* * *

Dr. L. Raymond Scherer of Minneapolis became president and **Dr. Howard B. Burchell** of the Mayo Clinic, was chosen president-elect at the biannual meeting of the Minnesota Society of Internal Medicine. **Dr. James J. Coll** of Duluth is outgoing president, and **Dr. R. Kindell** of St. Paul continues as secretary-treasurer. **Dr. Laurentious O. Underdahl,** head of a Clinic Section of General Medicine, Rochester, was program chairman.

Dr. Neil R. Kippen of Breckenridge was inducted a new fellow of the American College of Surgeons.

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At the recent meeting of the Wabasha County Medical Society, **Dr. Raymond V. Randall** of the Mayo Clinic and **Dr. Valentine O'Malley,** Chief Medical Consultant Disability Determination Section Division of Vocational Rehabilitation were the guest speakers. **Dr. W. P. Gjerde** of Lake City is Vice President of the Society, **Dr. D. G. Mahle** of Plainview, Secretary-Treasurer, and **Dr. and Mrs. Welliner** of Rochester, honorary members. Members of a Mayo Clinic team made up a symposium presented at the 37th annual reunion of the Alumni Association of the Mayo Foundation. The doctors presenting the symposium were: **Dr. John W. Kirklin, Dr. W. S. Payne** and **Dr. Alfred Uihlein.**

* * *

Dr. Charles W. Mayo, Rochester, was elected chairman of the University of Minnesota Board of Regents recently.

* * *

Dr. Richard R. Cranmer of Minneapolis, one of the founders of the Minnesota Blue Shield, will retire as executive director of the organization at some future date.

Educational seminars were held in Hutchinson in October with the following doctors participating as speakers: **Dr. Melvin Sinykin,** Minneapolis, **Dr. Zondal Miller** of St. Paul, and **Dr. Arthur Kerkhoff,** Minneapolis. **Drs. Orlo K. Behr, Chester L. Oppegaard, Robert F. Schnabel, William F. Mercil, Stanton A. Hirsh** and **Albert H. Fortman,** all of Crookston, recently spoke at the two-day course for nurse anesthetists employed in hospitals in northwestern Minnesota.

* * *

At the 15th Anniversary Fall Refresher of the Minnesota Academy of General Practice the following 1961-62 officers were named: **Dr. Robert B. Potter,** Minneapolis, president; **Dr. James A. Cosgriff, Jr.,** Olivia, President-Elect; **Dr. Mathew K. Plasha,** Coon Rapids, Vice President; **Dr. Walter E. Krafft,** Minneapolis, Secretary-Treasurer. Delegates to the AAGP Congress of Delegates are: **Dr. John G. Lohmann,** Pipestone, **Dr. Robert O. Quello,** Minneapolis. **Dr. Herb L. Huffington** of Waterville will continue as Executive Director. **Dr. Royal R. Moses** of Kenyon was presented with a gold filled AAGP lapel pin and his sponsor **Dr. P. F. Meyers** of Faribault received recognition.

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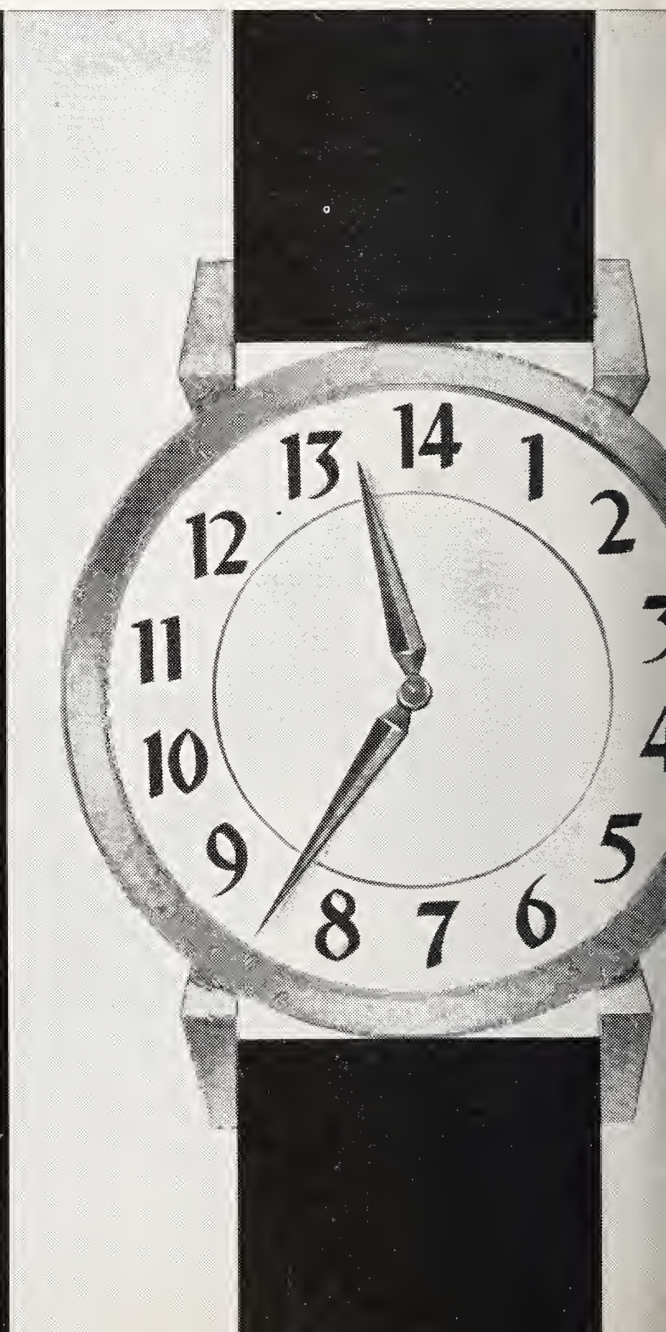

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Second prize and certificates of the 1961 Ames Awards of the American College of Gastroenterology was awarded to **Dr. Eric E. Wollaeger** and **Dr. Paul Aa Green** of Rochester for "Idiopathic Nontropical Sprue (Malabsorption Syndrome)."

* * *

Dr. John Stam, Worthington, was elected chairman of the newly-formed Citizens School Site Committee.

* * *

Dr. Arlo Blumer, Albert Lea, had his orders calling him into active service rescinded by the U. S. Army. Dr. Blumer is a member of the Medical Arts Clinic.

* * *

Dr. Herman E. Drill, Hopkins, received an outstanding achievement award from the University of Minnesota at the annual dinner meeting of the Minnesota Medical Alumni Association.

* * *

Dr. Rueben Berman, Minneapolis, spoke at the meeting of the B'nai B'rith Women.

Dr. Milo A. Mochal, Worthington, joined a clinic group in Streater, Illinois.

* * *

Dr. Leonard W. Mayo has been named by President Kennedy to head a group planning new approaches for prevention and cure of mental retardation.

* * *

Dr. C. Walton Lillehei, University of Minnesota heart surgeon, has been named part of a "faculty" of American specialists who will lecture for several days to physicians and surgeons in the Phillipines and Taiwan.

* * *

Dr. N. L. Gault, assistant dean of the University of Minnesota medical school, was elected secretary-treasurer of the Minnesota Medical foundation.

* * *

Dr. Whitney Woodruff, East Range Clinic, Virginia, has been made a fellow of the American College of Surgeons.

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Supplement to MINNESOTA MEDICINE, Volume 44, June, 1961

Minnesota State Medical Association
Roster - 1961

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Martin O. Nesheim, M.D. (2nd)	Emmons
L. J. Monson, M.D. (3rd)	Canby
L. E. Sjostrom, M.D. (4th)	St. Peter
A. K. Stratte, M.D. (5th)	Pine City
W. W. Rieke, M.D. (6th)	Wayzata
W. E. Fitzsimons, M.D. (7th)	Brainerd
C. W. Jacobson, M.D. (8th)	Breckenridge
J. K. Butler, M.D. (9th)	Cloquet

Scholarship and Loan Committee

C. G. Sheppard, M.D. (Chairman)	Hutchinson
L. G. Bartholomew, M.D.	Rochester
Richard Engwall, M.D.	Tyler
R. H. Puumala, M.D.	Cloquet
L. H. Rutledge, M.D.	Detroit Lakes
B. J. Spencer, M.D.	Minneapolis
R. H. Wilson, M.D.	Winona

University Relations

Clarence Jacobson, M.D. (Chairman)	Chisholm
B. B. Souster, M.D.	St. Paul
H. B. Sweetser, M.D.	Minneapolis
C. R. Tifft, M.D.	St. Paul
R. H. Wilson, M.D.	Winona

Councilor Districts

FIRST DISTRICT

W. E. Wellman, M.D. .... Rochester
Counties—Dodge, Fillmore, Goodhue, Houston, Mower, Olmsted, Rice, Steele, Wabasha, Winona.

SECOND DISTRICT

W. B. Wells, M.D. .... Jackson
Counties—Cottonwood, Faribault, Freeborn, Jackson, Martin, Murray, Nobles, Pipestone, Rock, Watonwan.

THIRD DISTRICT

P. E. Hermanson, M.D. .... Hendricks
Counties—Big Stone, Chippewa, Kandiyohi, Lac Qui Parle, Lincoln, Lyon, Meeker, Pope, Redwood, Renville, Stevens, Swift, Traverse, Yellow Medicine.

FOURTH DISTRICT

Alvin M. Jensen, M.D. .... Brownton
Counties—Blue Earth, Brown, Carver, Le Sueur, McLeod, Nicollet, Scott, Sibley, Waseca.

FIFTH DISTRICT

J. P. Medelman, M.D. .... St. Paul
Counties—Anoka, Chisago, Dakota, Isanti, Kanabec, Mille Lacs, Pine, Ramsey, Sherburne, Washington.

SIXTH DISTRICT

Donald McCarthy, M.D. .... Minneapolis
Counties—Hennepin, Wright.

SEVENTH DISTRICT

W. W. Will, M.D. .... Bertha
Counties—Aitkin, Beltrami, Benton, Cass, Clearwater, Crow Wing, Hubbard, Morrison, Stearns, Todd, Wadena.

EIGHTH DISTRICT

George A. Sather, M.D. .... Fosston
Counties—Becker, Clay, Douglas, Grant, Kittson, Lake of the Woods, Mahnomen, Marshall, Norman, Otter Tail, Pennington, Polk, Red Lake, Roseau, Wilkin.

NINTH DISTRICT

R. P. Buckley, M.D. .... Duluth
Counties—Carlton, Cook, Itasca, Koochiching, Lake, St. Louis.

County Medical Advisory Committees

AITKIN COUNTY

F. C. Closuit	Aitkin
H. T. Petraborg	Aitkin

ANOKA COUNTY

J. W. Schut	Anoka

BECKER COUNTY

Arnold Larson	Detroit Lakes
Arvid Houglum	Lake Park

BELTRAMI COUNTY

T. P. Groschupf	Bemidji
H. A. Palmer	Blackduck
D. D. Whittemore	Bemidji

BIG STONE COUNTY

I. L. Oliver	Graceville
Otto Bergen	Clinton
H. H. Hedemark	Ortonville

BLUE EARTH COUNTY

P. M. Smith	Lake Crystal
H. R. Snider	Mankato
F. D. Roth	Mankato

BROWN COUNTY

O. B. Fesenmeier	New Ulm
Albert Fritsche	New Ulm
C. A. Saffert	New Ulm

CARLTON COUNTY

R. H. Puumala	Cloquet
Alvan Sach-Rowitz	Moose Lake

CARVER COUNTY

G. T. Schimelpfenig	Chaska
Leighton Larson	Waconia
John Clarke	Waconia

CASS COUNTY

O. F. Ringle	Walker
C. H. Coombs	Cass Lake

CHIPPEWA COUNTY

H. A. Roust	Montevideo
F. M. Burns	Milan
J. H. Allen	Montevideo
L. R. Lima	Montevideo

CHISAGO COUNTY

R. G. Swenson	North Branch

CLAY COUNTY

O. H. Johnson	Moorhead
Marvin J. Geib	Fargo, N. D.

CLEARWATER COUNTY

W. E. Anderson	Clearbrook

COOK COUNTY

W. R. Smith	Grand Marais

COTTONWOOD COUNTY

H. C. Stratte	Windom
E. S. Schutz	Mountain Lake
J. V. Carlson	Westbrook

CROW WING COUNTY

V. E. Quanstrom	Brainerd
G. I. Badeaux	Brainerd
J. B. Nixon	Crosby

COUNTY MEDICAL ADVISORY COMMITTEES

DAKOTA COUNTY

ernice Thoreson	So. St. Paul
. J. Just	Hastings
. H. Field	Farmington

DODGE COUNTY

. E. Bigelow	Dodge Center
. E. Affeldt	Kasson
. E. Olson	West Concord

DOUGLAS COUNTY

. E. Emerson	Osakis
. W. Clifford	Alexandria
. H. Cain	Alexandria

FARIBAULT COUNTY

W. C. Chambers	Blue Earth
ichard Virnig	Wells
John L. Mills	Winnebago

FILLMORE COUNTY

H. M. Skaug	Chatfield
J. P. Nehring	Preston

FREEBORN COUNTY

T. M. Hansen	Albert Lea
L. M. Ellertson	Albert Lea
Theodore Gill	Albert Lea

GOODHUE COUNTY

G. F. Hartnagel	Red Wing
W. M. Akins	Red Wing

GRANT COUNTY

L. R. Parson	Elbow Lake
V. A. Doms	Elbow Lake

HENNEPIN COUNTY

Bernard I. Saliterman	Minneapolis
Robert D. Semsch	Minneapolis
Arnold S. Anderson	Minneapolis
David W. Feigal	Minneapolis
Harold E. Miller	Minneapolis
Luther W. Carlander	Minneapolis
Gordon W. Strom	Minneapolis

HOUSTON COUNTY

N. T. Norris	Caledonia
L. K. Onsgard	Houston
L. A. Knutson	Spring Grove

HUBBARD COUNTY

W. W. Higgs	Park Rapids

ISANTI COUNTY

W. T. Nygren	Braham
G. E. Larson	Cambridge
J. Pone	Cambridge

ITASCA COUNTY

L. E. Karges	Grand Rapids

JACKSON COUNTY

J. T. Rose	Lakefield
H. A. Christiansen	Jackson
W. H. Halloran	Jackson

KANABEC COUNTY

E. C. Burseth	Mora

KANDIYOHI COUNTY

W. E. Peterson	Willmar
R. K. Proeschel	Willmar
Jack Guy	New London

KITTSON COUNTY

R. B. Skogerboe	Karlstad

KOOCHICHING COUNTY

R. D. Hanover	International Falls

LAC QUI PARLE COUNTY

N. M. Westby	Madison
P. W. Maus	Dawson

LAKE COUNTY

Ralph Papermaster	Two Harbors

LAKE-OF-THE-WOODS COUNTY

A. A. Brink	Baudette

LINCOLN COUNTY

C. P. Johnson	Tyler
G. Guldseth	Hendricks

LYON COUNTY

K. A. Peterson	Marshall
W. Workman	Tracy

MARSHALL COUNTY

Carle Holmstrom	Warren

MARTIN COUNTY

C. W. Krause	Fairmont
H. A. Williamson	Fairmont
Anthony Ourada	Fairmont
M. J. Lester	Truman

McLEOD COUNTY

G. L. Griebie	Brownton
John Smythe	Lester Prairie
Kenneth Peterson	Hutchinson

MEEKER COUNTY

Donald Dille	Litchfield
D. Allison	Litchfield
Marvin Johnson	Dassel

MILLE LACS COUNTY

W. F. McManus	Princeton

MORRISON COUNTY

A. M. Watson	Royalton
O. C. Bolstad	Little Falls
M. L. Hansen	Little Falls

MOWER COUNTY

L. F. Twiggs	Austin
J. G. Havens	Austin

MURRAY COUNTY

J. L. Bader	Slayton
R. F. Pierson	Slayton
H. D. Patterson	Slayton

NICOLLET-LE SUEUR COUNTY

M. D. Olmanson	St. Peter
L. E. Sjostrom	St. Peter
C. S. Strathern	St. Peter
R. A. Curtis	Le Center
D. A. Limbeck	Le Sueur

NOBLES COUNTY

R. K. Minge	Worthington
D. E. Nealy	Adrian
E. A. Kilbride	Worthington

NORMAN COUNTY

Byron Kinkade	Ada

OLMSTED COUNTY

N. O. Hanson	Rochester
J. E. Verby	Rochester
T. O. Wellner	Rochester

OTTER TAIL COUNTY

C. A. Boline	Battle Lake
A. E. Sethre	Fergus Falls
P. B. Schoeneberger	Perham
Ralph Estrem	Fergus Falls
Robert Estrem	Fergus Falls

PENNINGTON COUNTY

M. D. Starekow	Thief River Falls

PINE COUNTY

A. K. Stratte	Pine Ctiy

PIPESTONE COUNTY

W. G. Benjamin	Pipestone
J. G. Lohmann	Pipestone
G. Beckering	Edgerton

POLK COUNTY

C. G. Uhley	Crookston

POPE COUNTY

G. E. Lee	Glenwood
F. D. Bucher	Starbuck

RAMSEY COUNTY

F. P. Arny	St. Paul
P. H. Soucheray	St. Paul

RED LAKE COUNTY

Les N. Dale	Red Lake Falls

REDWOOD COUNTY

W. Alcorn	Wabasso
W. E. Johnson	Morgan
S. F. Ceplecha	Redwood Falls

RENVILLE COUNTY

J. A. Cosgriff	Olivia
C. A. Anderson	Hector
Leo Furr	Bird Island

RICE COUNTY

A. W. Nuetzman	Faribault
Bernard Street	Northfield
Paul G. Bauer	Faribault

ROCK COUNTY

C. L. Sherman	Luverne
A. C. Martin	Luverne
F. W. Bofenkamp	Luverne
E. S. Boone	Luverne
D. M. Odland	Luverne

ROSEAU COUNTY

Lloyd Klefstad	Greenbush

ST. LOUIS COUNTY

Richard Bardon	Duluth
J. C. Feuling	Duluth
J. H. Peterson	Duluth
W. Eisenman	Hibbing
R. E. Barnes	Aurora

SCOTT COUNTY

H. M. Juergens	Belle Plaine
Harry N. Simmonds	Prior Lake
J. E. Ponterio	Shakopee

SHERBURNE COUNTY

G. H. Tesch	Elk Riv

SIBLEY COUNTY

Rolf Hovde	Winthro
R. H. Kath	Arlingto
A. F. Dysterheft	Gaylor

STEARNS-BENTON COUNTY

L. A. Veranth	St. Clou
J. B. Beuning	St. Clou
P. L. Halenbeck	St. Clou
Otto C. Phares	St. Clou

STEELE COUNTY

R. W. deWerd	Owatonna
D. H. Honath	Owatonna
A. J. Floersch	Owatonna

STEVENS COUNTY

O. A. Eide	Hancock
R. A. Rossberg	Morris
A. I. Arneson	Morris

SWIFT COUNTY

Robert Nelson	Benson
Karl L. Helwig	Kerkhoven
Joseph Rorem	Appleton

TODD COUNTY

M. E. Mosby	Long Prairie
J. M. Cook	Staples
F. N. Grose	Clarissa

TRAVERSE COUNTY

A. L. Lindberg	Wheaton
A. E. Magnuson	Wheaton
H. C. Winge	Wheaton

WABASHA COUNTY

L. M. Ekstrand	Wabasha
E. C. Bayley	Lake City
E. W. Ellis	Elgin

WADENA COUNTY

L. T. Davis	Wadena
W. E. Parker	Sebeka

WASECA COUNTY

S. T. Normann, Jr.	Waseca
George Olds	New Richland

WASHINGTON COUNTY

J. E. Jenson	Stillwater
R. E. Carlson	Stillwater

WATONWAN COUNTY

A. D. Mattson	St. James
Herbert Boysen	Madelia

WILKIN COUNTY

L. O'Brien	Breckenridge
C. W. Jacobson	Breckenridge
Neil Kippen	Breckenridge

WINONA COUNTY

Herbert vR Heise	Winona

WRIGHT COUNTY

S. J. Raetz	Maple Lake
R. M. Sandeen	Buffalo

YELLOW MEDICINE COUNTY

Carl Lundell	Granite Falls
O. M. Odlund	Granite Falls

Woman's Auxiliary to the Minnesota State Medical Association

Officers

Mrs. W. A. Merritt	*President*	Rochester
Mrs. M. I. Hauge	*President-Elect*	Clarkfield
Mrs. Leo W. Fink	*First Vice President*	Minneapolis
Mrs. Karl E. Johnson	*Second Vice President*	Duluth
Mrs. John W. Gridley	*Third Vice President*	Arlington
Mrs. Haddon M. Carryer	*Fourth Vice President*	Rochester
Mrs. George L. Joyce	*Recording Secretary*	Rochester
Mrs. N. O. Hanson	*Corresponding Secretary*	Rochester
Mrs. Ralph L. Olsen	*Treasurer*	St. Paul
Mrs. Charles W. Froats	*Auditor*	St. Paul
Mrs. Peter S. Rudie	*Historian*	Duluth
Mrs. M. F. Fellows	*Parliamentarian*	Duluth

Regional Advisors

Mrs. David C. Dahlin	*First District*	Rochester
Mrs. David J. Halpern	*Second District*	Brewster
(To be selected)	*Third District*	
Mrs. Alvin M. Jensen	*Fourth District*	Brownton
Mrs. E. G. Hubin	*Fifth District*	Sandstone
Mrs. Harold G. Benjamin	*Sixth District*	Minneapolis
Mrs. Arthur H. Borgerson	*Seventh District*	Long Prairie
(To be selected)	*Eighth District*	
Mrs. John K. Butler	*Ninth District*	Cloquet

CHAIRMEN OF COMMITTEES

AMEF—Mrs. Thomas M. Seery	Rochester
Archives—Mrs. John F. Norman	St. Paul
Civil Defense—Mrs. G. A. Koelsche	Rochester
Committee for the Aged—Mrs. Conrad I. Karleen	Minneapolis
Community Service—Mrs. Karl E. Johnson	Duluth
Mrs. L. Raymond Scherer	Minneapolis
Editor—Mrs. M. M. Howell	Glencoe
Finance—Mrs. Elmer M. Hill	Minneapolis
Health Careers—Mrs. Bernard A. Flesche	Lake City
In Memoriam—Mrs. Karl W. Andeson	Excelsior
Legislation—Mrs. Winston R. Lindberg	Wayzata
Medical and Surgical Relief—Mrs. John G. Lohmann	Pipestone
Mental Health—Mrs. F. E. Ellison	Monticello
Press and Publicity—Mrs. R. O. Quello	Minneapolis
Printing and Roster—Mrs. Frederick G. Gunlaugson	Minneapolis
Programs Coordinator—Mrs. L. W. Fink	Minneapolis
Resolutions—Mrs. Fred C. Westerman	Montgomery
Revisions—Mrs. L. P. Howell	Rochester
Safety—Mrs. E. R. Hudec	Echo
Mrs. William P. Gjerde	Lake City
Social—Mrs. F. W. Conley	Duluth
Mrs. Henry E. Hoffert	Minneapolis
Mrs. Albert C. Kelly	St. Paul
Mrs. L. J. Leonard	Minneapolis
Mrs. William H. Von derWeyer	St. Paul

County Medical Society Roster

Key to the Symbols as Follows:
***Deceased; †Associate, Affiliate, Life and Resident Members; #Service;**
‡Wife is Member of Woman's Auxiliary; ¶Honorary Member.

BLUE EARTH COUNTY MEDICAL SOCIETY

Blue Earth County
Regular meetings, last Monday of the month
Annual meeting in December
Number of members—57

	President	
	Mickelson, John C.	Mankato
	Secretary	
	Sanford, Raymond A.	Mankato
‡	Anderson, Oscar D.	North Mankato
†‡	Andrews, Roy N.	Mankato
‡	Batdorf, B. Niles	Mankato
†	Butzer, John A.	Mankato
†	Butzer, John F.	Mankato
‡	Chalgren, William S.	Mankato
‡	Conley, Robert H.	Mankato
	Dobson, Mervin W.	Mankato
‡	Engstrom, Robert B.	Mankato
‡	Eustermann, John J.	Mankato
‡	Fortier, Rene G.	Mankato
†	Franchere, Frederick W.	Lake Crystal
‡	Geurs, Benjamin R.	Mankato
‡	Gislason, Paul H.	Mankato
‡	Hammar, Lawrence M.	Mankato
	Hankerson, Robert G.	Minnesota Lake
‡	Heimark, John J.	Mankato
‡	Heller, Edgar E.	Mankato
	Hoeper, Philip G.	Mankato
‡	Howard, Marshall I.	Mankato
†	Huffington, Herbert L.	Lutsen
‡	Jones, Orville H.	Mankato
†	Juliar, Richard O.	Los Angeles, Calif.
‡	Kaufman, Walter B.	Mankato
‡	Kearney, Rochfort W.	Mankato
†	Kemp, Alphonse F.	Mankato
*†‡	Koenigsberger, Charles G.	Mankato
†	Liedloff, Adolph G.	Mankato
‡	Lindblom, Alton E.	North Mankato
†	Luck, Hilda	Mankato
	Lund, J. Benjamin	Mankato
‡	Marso, John L.	Mankato
‡	Mathews, Wallace E.	Mankato
‡	Meredith, Donald C.	Mankato
‡	Mickelson, John C.	Mankato
†	Miller, Victor I.	Belmont, Calif.
‡	Morgan, Hugh O.	Amboy
‡	Olive, John T., Jr.	Mankato
‡	Penn, George E.	Mankato
‡	Roth, Frederick D.	Mankato
‡	Sanford, Raymond A.	Mankato
‡	Scheidel, Alois McK.	Mankato
†	Schmidt, Paul A.	Aurora, Illinois
‡	Schmitz, Anthony A.	Mankato
‡	Setzer, Hobert J., Jr.	Mankato
‡	Sjoding, J. Donald	Mankato
‡	Smith, Harry J.	Lake Crystal
	Smith, Paul M.	Lake Crystal
‡	Snider, Howard R.	Mankato
‡	Stillwell, Walter C.	Mankato
‡	Swenson, Donald B.	Mankato
‡	Thiem, Chester E.	Mankato
†	Troost, Henry B.	Mankato
‡	Vezina, John C.	Mapleton
‡	Von Drasek, Joseph	Mankato
†‡	Wentworth, Albert J.	Mankato
†	Williams, Hugh O.	Lake Crystal
‡	Wohlrabe, John C.	North Mankato

BLUE EARTH VALLEY MEDICAL SOCIETY

Martin, Watonwan and Faribault Counties
Regular meetings, third Thursday of each month
Annual meeting in November
Number of members—47

	President	
	Hruza, William J.	Madelia
	Secretary	
	Boysen, Herbert	Madelia
‡	Anderson, John W.	Blue Earth
	Armstrong, Ralph S.	Winnebago
‡	Barr, James S.	Elmore
	Bellomo, John	Fairmont
‡	Bergman, Oscar B.	St. James
‡	Boysen, Herbert	Madelia
	Bratrude, Earl J.	St. James
†	Chambers, Winslow C.	Blue Earth
‡	Coulter, Harold E.	Madelia
‡	Cullen, Robert M.	Wells
‡	Drexler, George W.	Blue Earth
‡	Feigal, William M.	Fairmont
‡	Gardner, Jack K.	Fairmont
‡	Gardner, Victor H.	Fairmont
	Gustafson, Robert W.	Fairmont
‡	Halverson, Donald E.	Winnebago
‡	Halverson, William G.	Madelia
‡	Hanson, Lewis	Frost
‡	Hruza, William J.	Madelia
†	Hunt, Roscoe C.	Fairmont
	Kraemer, George N.	Fairmont
	Krause, Carl W.	Fairmont
‡	Lester, Malcolm J., Jr.	Truman
	Lester, John W.	Truman
	Lindahl, Merlyn J.	Sherburn
	Louisell, Charles T.	Fairmont
‡	Mattson, Albert D.	St. James
	Mills, John L.	Winnebago
‡	Moulton, Keith B.	St. James
‡	Nickerson, John R.	Fairmont
‡	Nickerson, Neil D.	Fairmont
‡	Ourada, Anthony L.	Fairmont
‡	Parsons, R. A.	St. James
	Parsons, Ralph L.	Trimont
‡	Russ, Homer H.	Blue Earth
	Schulz, Robert W.	Fairmont
	Smith, Don V.	Blue Earth
‡	Snyder, Clifford D.	Kiester
‡	Thayer, Ellsworth A.	Fairmont
‡	Vaughn, Victor M.	Truman
‡	Virnig, Mark P.	Wells
‡	Virnig, Richard P.	Wells
‡	Wandke, Otto E.	Fairmont
‡	Watkins, John A.	Wells
‡	Williamson, Harold A.	Fairmont
†	Wilson, Clyde E.	Blue Earth
‡	Zemke, Erhart E.	Fairmont

BROWN COUNTY MEDICAL SOCIETY

Brown County
Regular meetings, January, April, October
Annual meeting in January
Number of members—30

	President	
	Kaiser, Milton L.	New Ulm
	Secretary	
	Kitzberger, Peter J., Jr.	New Ulm
‡	Baker, John H.	New Ulm
‡	Black, William A.	New Ulm
‡	Boyle, Francis J.	Springfield
‡	Burnett, Joseph W.	New Ulm
‡	Cairns, Robert J.	Redwood Falls
‡	Carthey, Frank J.	New Ulm
‡	Dysterheft, Adolf F.	Gaylord
‡	Fesenmaier, Otto B.	New Ulm
‡	Fritsche, Albert	New Ulm
‡	Fritsche, Carl J.	New Ulm
‡	Fritsche, Theodore R.	New Ulm
	Goblirsch, Andrew P.	Sleepy Eye
	Hovde, Rolf	Winthrop
‡	Kaiser, Milton L.	New Ulm
‡	Keithahn, Elmer E.	Sleepy Eye
‡	Kitzberger, Peter J., Jr.	New Ulm
‡	Kruzich, Stephen J.	Sleepy Eye
†	Kusske, Arthur L.	New Ulm
‡	Muesing, William J.	New Ulm
‡	Nelson, Frank F.	New Ulm
†	Nuessle, Walter G.	Springfield
‡	Penk, Engward L.	Springfield
	Peterson, Roy A.	Vesta
‡	Rimas, Matthew J.	Comfrey
‡	Saffert, Cornelius A.	New Ulm
‡	Schroeppel, John E.	Winthrop
‡	Seifert, Otto J.	New Ulm
‡	Vogel, Howard A. L.	New Ulm
‡	Wohlrabe, Donald E.	Springfield
‡	Wohlrabe, Edwin J.	Springfield

COUNTY SOCIETY ROSTER

CAMP RELEASE DISTRICT MEDICAL SOCIETY

Chippewa, Lac qui Parle and Yellow Medical Counties
Regular meetings, 2nd Thursday of each month
Annual meeting in December
Number of members—30

	President	
	Allen, John H.	Montevideo
	Secretary	
	Radke, Robert L.	Montevideo
	Allen, John H.	Montevideo
	Anderson, Chester A.	Madison
	Barr, Ronald W.	Montevideo
	Boody, George J., Jr.	Cambridge
	Burns, Floyd M.	Milan
	Burns, M. A.	Milan
	Callewart, Robert A.	Minneapolis
	Camp, Ray Junior	Madison
	Fallon, Virgil T.	Dawson
‡	Hagberg, Norman L.	Montevideo
‡	Hauge, Malvin I.	Clarkfield
†	Holmberg, LeRoy J.	Canby
‡	Hudec, Elwyn R.	Echo
	Hustad, Edward G.	Minneapolis
‡	Johnson, Vilhelm M.	Dawson
†	Jordan, Kathleen B. Smith	Granite Falls
	Jordan, Lewis S.	Granite Falls
‡	Kaufman, William C.	Appleton
‡	Lima, Ludvig R., Jr.	Montevideo
‡	Lundell, Carl L.	Granite Falls
	Maus, Philip W.	Dawson
‡	Miller, William P.	Montevideo
	Niazi, Suad A.	Granite Falls
‡	Odland, Olin M.	Granite Falls
‡	Owens, William A.	Montevideo
	Pertl, Albert L.	Canby
‡	Radke, Robert L.	Montevideo
‡	Roust, Henry A.	Montevideo
‡	Schmidt, Paul G., Jr.	Granite Falls
‡	Westby, Norval M.	Madison

CLAY-BECKER COUNTY MEDICAL SOCIETY

Clay and Becker Counties
Regular meetings, three per year
Annual meeting in December
Number of members—28

	President	
	Simison, Carl	Barnesville
	Secretary	
	Odland, M. E.	Detroit Lakes
	Bigler, Earl E.	Perham
	Bigler, Ivan E.	Perham
	Bottolfson, Bottolf T.	Moorhead
	Carlson, Vernon J.	Moorhead
	Dodds, William C.	Detroit Lakes
	Duncan, James W.	Moorhead
	Geib, Marvin J.	Fargo, N. D.
†	Hagen, Olaf J.	Moorhead
‡	Holten, John	Moorhead
‡	Houglum, Arvid J.	Lake Park
	Johnson, Olga H.	Moorhead
	Koons, W. R.	Mahnomen
‡	Larson, Arnold	Detroit Lakes
‡	Lorentzen, Ernest S.	Detroit Lakes
‡	Marsovszky, Paul	Moorhead
‡	Midthune, Andreen S.	Lake Park
‡	Moberg, Clarence W.	Detroit Lakes
‡	Odland, M. E.	Detroit Lakes
†	Otto, Henry C.	Frazee
‡	Rice, Hagbart G.	Moorhead
‡	Rutledge, John B.	Detroit Lakes
‡	Rutledge, Lloyd H.	Detroit Lakes
	Saxman, Gertrude E. Olsen	Ulen
‡	Simison, Carl	Barnesville
†	Thysell, Fred A.	Moorhead
‡	Thysell, Vernon D.	Moorhead
‡	Watson, Robert N.	Detroit Lakes
‡	Watson, Virgil A.	Detroit Lakes

EAST CENTRAL MINNESOTA MEDICAL SOCIETY

Anoka, Chisago, Isanti, Kanabec, Mille Lacs, Pine and Sherburne Counties
Regular meetings, 1st Tuesday of every other month of the year
Annual meeting 1st Tuesday in December
Number of members—45

	President	
	Nelson, Luther A.	Rush City
	Secretary	
	Tesch, Gordon H.	Elk River
	Adkins, Galen H.	Sandstone
	Ahlstrom, Robert C.	Braham
	Albrecht, Harold H.	Lindstrom
	Anderson, Jo E.	Elk River
	Berge, Harry L.	Mora
	Berglund, Alvin E.	Cambridge
	Bossert, Clarence S.	Mora
	Bunker, Bevan W.	Anoka
	Burseth, Edgar C.	Mora
	Courteau, Robert D.	Onamia
	Deason, Keith B.	Chisago City
	Fryling, Vera B.	San Francisco, Calif.
	Gailitis, Veronika M.	Cambridge
	Halpin, Joseph E.	Rush City
	Henry, Harold W.	Hinckley
	Holmes, Alva E.	Rush City
	Hovde, Gordon W.	Lindstrom
	Huber, Robert W.	St. Croix Falls
‡	Hubin, Edwin G.	Sandstone
	Johnson, Aldridge F.	Isle
	Kapsner, Alfred T.	Princeton
†	Kelsey, Carleton G.	St. Paul
‡	Larson, Gerald E.	Cambridge
	Lewallen, Gene S.	Mora
‡	McManus, William F.	Princeton
	Mach, Ralph F.	Pine City
‡	Magnuson, Raymond C.	Cambridge
	Metcalf, Norman B.	Princeton
	Nelson, Luther A.	Rush City
‡	Nordman, Willard F.	Mora
	Nygren, William T.	Braham
‡	Peterson, Alvin C.	Mora
‡	Peterson, Donald B.	Anoka
	Pone, John	Cambridge
	Popovich, Dragojla	Anoka
‡	Roehlke, Arthur B.	Elk River
#	Sommer, Robert K.	Markham, Illinois
‡	Spurzem, Raymond J.	Anoka
‡	Stratte, Alf K.	Pine City
‡	Swenson, Roy G.	North Branch
‡	Tesch, Gordon H.	Elk River
	Textor, Jerome	Anoka
*	Vik, Melvin	Cambridge
	Vitols, Eugenie K.	San Francisco, Calif.
†	Waller, Joseph D.	Pine City
†	Woyda, William C.	Minneapolis
‡	Zinn, Charles W.	Elk River

FREEBORN COUNTY MEDICAL SOCIETY

Freedom County
Regular meetings third Thursday of even numbered months
Annual meeting in December
Number of members—35

	President	
	Sherman, Alfred G.	Albert Lea
	Secretary	
	Steiner, Leon E.	Albert Lea
	Barr, Lowell C.	Albert Lea
	Bartness, John	Albert Lea
	Blumer, Arlo R.	Albert Lea
	Burns, Catherine	Excelsior
	Berry, Jack	Albert Lea
	Butturff, Carl R.	Freeborn
	Calhoun, Frank W.	Albert Lea
	Demo, Robert A.	Albert Lea
	Donovan, Daniel L.	Albert Lea
‡	Egge, Sanford G.	Albert Lea
‡	Ellertson, Leonard M.	Albert Lea
‡	Erdal, Ove A.	Albert Lea
†	Freeman, John P.	Glenville
‡	Gamble, Elbert J.	Albert Lea
‡	Gill, Theodore M.	Albert Lea
†	Gullickson, Andrew	Minneapolis
‡	Hansen, Theodore M.	Albert Lea
‡	Holian, Darwin K.	Albert Lea
†	Kaasa, Lawrence J.	Albert Lea
‡	Keil, Marcus A.	Albert Lea
†	Leopard, Brand A.	Brownsville, Texas
‡	Menefee, Edward C.	Albert Lea
‡	Neel, Harry B.	Albert Lea
	Nelson, Charles H.	Albert Lea
‡	Nelson, Clayton E.	Albert Lea
†	Nelson, Wilhma B.	Albert Lea
‡	Nesheim, Martin O.	Emmons
‡	Palmer, Clinton F.	Albert Lea
‡	Person, John P.	Albert Lea
‡	Prins, Leo R.	Albert Lea
‡	Schmidt, Ruben F.	Alden
‡	Sherman, Alfred G.	Albert Lea
‡	Steiner, Leon E.	Albert Lea
‡	Whitson, Sidney A.	Albert Lea
‡	Wilcox, G. Charles	Albert Lea

COUNTY SOCIETY ROSTER

GOODHUE COUNTY MEDICAL SOCIETY

Goodhue Couty
Regular meetings, 3rd Tuesday
Annual meeting in March
Number of members—23

President
Halverson, James W. ... Zumbrote
Secretary
Wasmund, Clarence W. ... Red Wing
† Aanes, Almer M. ... Red Wing
‡ Ahern, Gene J. ... Red Wing
‡ Akins, Willard M. ... Red Wing
‡ Billings, Harry H. ... Red Wing
‡ Brusegard, James F. ... Red Wing
Douglass, Jesse E. ... Cannon Falls
Falls, John L. ... Red Wing
†‡ Graves, Richard B. ... Red Wing
‡ Halvorson, James W. ... Zumbrota
‡ Hamilton, Samuel L. ... Red Wing
‡ Hartnagel, Grant F. ... Red Wing
‡ Hawley, George M. B., II ... Red Wing
‡ Juers, Edward H. ... Red Wing
‡ Larson, Oliver E. H. ... Zumbrota
‡ Liffrig, William W. ... Red Wing
Miller, Winston R. ... Red Wing
‡ Molenaar, Robert E. ... Cannon Falls
‡ Sherman, Royal V. ... Red Wing
† Smith, Myron W. ... Red Wing
‡ Steffens, Leon A. ... Red Wing
‡ Walter, William E. ... Wanamingo
‡ Wasmund, Clarence W. ... Red Wing
‡ Williams, Marland R. ... Cannon Falls

HENNEPIN COUNTY MEDICAL SOCIETY

Hennepin County
Regular meetings, first Monday of each month (October thru May)
Annual meeting, first Monday in October
Number of members—1101

President
Blake, James A. ... Hopkins
Secretary
Chisholm, Tague ... Minneapolis
Executive Secretary
Cook, Thomas P. ... Minneapolis
Abramson, Milton ... Minneapolis
‡ Abullarade, Jose A. ... Minneapolis
‡ Adkins, Charles D. ... Minneapolis
‡ Agustsson, Hreidar ... Minneapolis
‡ Ahern, Eugene E. ... Minneapolis
Alari, Heino ... Minneapolis
‡ Alexander, Harlan A. ... Minneapolis
‡ Aling, Charles A. ... Minneapolis
† Altnow, Hugo O. ... Coral Gables, Fla.
‡ Amatuzio, Donald S. ... Minneapolis
Anderegg, Alfred F. ... Minneapolis
Andersen, James G. ... Minneapolis
‡ Anderson, Arnold S. ... St. Louis Park
‡ Anderson, David M. ... St. Louis Park
† Anderson, Edward D. ... Gstaad, Switzerland
‡ Anderson, Ernest R. ... Minneapolis
‡ Anderson, Frank J. ... Minneapolis
Anderson, John A. ... Minneapolis
Anderson, John T. ... St. Paul
‡ Anderson, Karl W. ... Minneapolis
‡ Anderson, Richard W. ... Minneapolis
‡ Anderson, Roger L. ... Minneapolis
‡ Anderson, U. Schuyler ... Minneapolis
Anderson, Wallace E. ... Minneapolis
‡ Anderson, William H. ... Minneapolis
‡ Anderson, William T. ... Minneapolis
† Andreassen, Einar C. ... Minneapolis
‡ Andreassen, Rolf L. ... Minneapolis
Andresen, Karl d'A. ... Minneapolis
‡ Andrews, Robert S. ... Minneapolis
‡ Ankner, Frank J. ... Minneapolis
‡ Anonsen, Richard E. ... Minneapolis
† Arends, Archabald L. ... Minneapolis
‡ Arey, Stuart Lane ... Minneapolis
‡ Arhelger, Stuart W. ... Minneapolis
‡ Arlander, Clarence E. ... Minneapolis
‡ Arling, Leonard S. ... Minneapolis
‡ Arms, James J. ... Minneapolis
Armstrong, Byron H. ... Hopkins
Arnesen, Paul M. ... Minneapolis
Arnold, Ann W. ... Minneapolis
Arvidson, Carl G. ... Minneapolis
Azad, A. M. ... Minneapolis
‡ Baggenstoss, Osmond J. ... Minneapolis
‡ Bagley, Russell W. ... Minneapolis
Bah, Merle C. ... Minneapolis
*‡ Baird, Joseph W. ... Minneapolis
‡ Baken, Melvin P. ... Minneapolis
‡ Baken, Melvin P., Jr. ... St. Louis Park
Baker, Abe B. ... Minneapolis
† Baker, Alfred T. ... Minneapolis
‡ Baker, Milton E. ... Minneapolis
Bakke, Arnold C. ... Minneapolis
‡ Baleisis, Peter ... Minneapolis
‡ Balkin, Samuel G. ... Minneapolis
‡ Balogh, Charles J. ... Minneapolis
Bank, Harry E. ... Minneapolis
‡ Barnett, Robert M ... Minneapolis
‡ Barno, Alex ... St. Louis Park
‡ Barr, Maxwell M. ... Minneapolis
Barr, Robert N. ... Minneapolis
Barrett, Patrick J. ... Minneapolis
Barron, Jesse J. ... Minneapolis
†‡ Barron, Moses ... Minneapolis
Barron, S. Steven ... Minneapolis
Beach, Northrop ... Minneapolis
‡ Beirstein, Samuel ... Minneapolis
‡ Beiswanger, Richard H. ... Minneapolis
Bell, Donald C. ... Minneapolis
†‡ Bell, Elexious T. ... Minneapolis
‡ Bellville, Titus P. ... Minneapolis
‡ Belzer, Meyer S. ... Minneapolis
Bendel, Richard P. ... Minneapolis
Benesh, Louis A. ... Minneapolis
‡ Benjamin, Edwin G. ... Minneapolis
‡ Benjamin, Harold G. ... Minneapolis
Benjamin, Robert B. ... St. Louis Park
Berg, Clinton C. ... Wayzata
Berger, Alex G. ... Minneapolis
‡ Bergh, George S. ... Minneapolis
Bergh, Solveig M. ... Minneapolis
‡ Berglund, Eldon B. ... Minneapolis
‡ Bergquist, James R. ... Minneapolis
‡ Berkwitz, Nathaniel J. ... Minneapolis
Berman, Reuben ... Minneapolis
Bernstein, Irving C. ... Minneapolis
‡ Berris, Harold ... Minneapolis
‡ Bessesen, Alfred N., Jr. ... Minneapolis
‡ Bevis, William D. ... Minneapolis
Bieter, Raymond N. ... Minneapolis
‡ Bilka, Paul J. ... Minneapolis
‡ Binder, Manuel R. ... Minneapolis
Bittick, Wilbur H. ... Minneapolis
‡ Blake, Allan J. ... Hopkins
‡ Blake, James A. ... Hopkins
‡ Blake, Paul S. ... Hopkins
Bloch, Henry S. ... Minneapolis
‡ Bloedel, Traugott J. ... Osseo
‡ Blomberg, Robert D. ... Minneapolis
Bloom, David ... Minneapolis
‡ Bloom, Norman B. ... Minneapolis
*‡ Blumenthal, Jacob S. ... Minneapolis
‡ Boehrer, John J. ... Minneapolis
‡ Bofenkamp, Benjamin ... Minneapolis
‡ Bohn, Donald G. ... Minneapolis
‡ Boies, Lawrence R. ... Minneapolis
† Booth, Albert E. ... Minneapolis
*† Boreen, Clifton A. ... Minneapolis
† Borgeson, Egbert J. ... St. Paul
‡ Borman, Chauncey N. ... Minneapolis
‡ Borowicz, Leonard A. ... Minneapolis
‡ Bowers, Gordon G. ... Minneapolis
Bowlin, Paul F. ... Minneapolis
Boynton, Ruth E. ... Minneapolis
Bradley, Jeanne B. ... Minneapolis
Bradley, John G. ... Minneapolis
Brandt, Henry E. ... Minneapolis
†‡ Bratrud, Arthur F. ... Minneapolis
Braun, Rene ... Minneapolis
Brauti, Erling F. ... Minneapolis
Breitenbucher, Robert B. ... Minneapolis
‡ Brekke, Harvey J. ... Minneapolis
Brennan, Joseph G. ... Minneapolis
Bridge, Allyn G. ... Minneapolis
Brill, Alice K. ... Minneapolis
† Brooks, Charles N. ... Minneapolis
† Brown, Edgar D. ... Paynesville
Brown, William D. ... Minneapolis
Brown, William D., Jr. ... Minneapolis
‡ Buchstein, Harold F. ... Minneapolis
Buckley, Joseph J. ... Minneapolis
Buie, Louis A., Jr. ... Minneapolis
‡ Buirge, Raymond E. ... Minneapolis
‡ Burnham, Wesley H. ... Minneapolis
‡ Bushard, Wilfred J. ... Minneapolis
‡ Buzzelle, Leonard K. ... Minneapolis
‡ Cable, Morris L. ... Minneapolis
‡ Cabot, Clyde M. ... Minneapolis
† Cameron, Isabell L. ... Minneapolis
Campbell, Frederick W., ... Minneapolis
† Campbell, Lowell M. ... Minneapolis
‡ Campbell, Orwood J. ... Minneapolis
‡ Caplan, Leslie ... Minneapolis
‡ Card, William H. ... Minneapolis
Carey, James B., Jr. ... Minneapolis
‡ Carlander, Lester W. ... Minneapolis
‡ Carlson, Charles V. ... Mound
Carlson, Lawrence ... Minneapolis
‡ Carlson, Leonard T. ... Minneapolis
‡ Caron, Robert P. ... Minneapolis
Carr, William J. ... Minneapolis
‡ Caspers, Carl G. ... Minneapolis
Cauble, Charles F. ... Minneapolis
†‡ Cavanor, Frank T. ... Minneapolis
‡ Ceder, Elmer T. ... Minneapolis
‡ Cella, Joseph A. ... Minneapolis
‡ Chadbourn, Wayne A. ... Minneapolis
Challman, S. Alan ... Minneapolis
‡ Chesler, Merrill D. ... Minneapolis
Child, Sherman B. ... Minneapolis
‡ Chisholm, Tague C. ... Minneapolis
‡ Christensen, Llewellyn E. ... Minneapolis
Christenson, Leland R. ... Maple Plain
Clark, Malcolm D. ... Minneapolis
‡ Clark, Robert S. ... Minneapolis
‡ Clay, Lyman B. ... Minneapolis
Coe, John I. ... Minneapolis
‡ Cohen, Bernard A. ... Minneapolis
Cohen, Ephriam B. ... Minneapolis
Cohen, Henry W. ... Minneapolis
Cohen, Maynard M. ... Minneapolis
‡ Cohen, Sumner S. ... Minneapolis
‡ Cole, James S. ... Minneapolis
Cooper, John P. ... Minneapolis
‡ Cooper, Robert R. ... Minneapolis
Corniea, Albert D. ... Minneapolis
‡ Correa, Dale H. ... Minneapolis
Cowan, Donald W. ... Minneapolis
Craig, M. Elizabeth ... Minneapolis
†‡ Cranmer, Richard R. ... Minneapolis
Cranston, Robert W. ... Minneapolis
‡ Creevy, Charles D. ... Minneapolis
Crowley, Leonard V. ... Minneapolis
‡ Culligan, Leo C. ... Minneapolis
‡ Cundy, Donald T. ... Minneapolis
Cushing, Richard T. ... St. Louis Park
† Cutts, George ... Minneapolis
‡ Daggett, Donald R. ... Minneapolis
‡ Dahl, Elmer O. ... Minneapolis
Dahl, James C. ... Minneapolis
‡ Dahl, John A. ... Minneapolis
† Daniel, Donald H ... Minneapolis
Danyluk, Michael ... Minneapolis
Dargay, Cyril P. ... Minneapolis
‡ David, Reuben ... Hopkins
Davis, Eunice A. ... Minneapolis
‡ Davis, Jay C. ... Minneapolis
Dehnel, Luther L. ... Minneapolis
del Plaine, Carlos W. ... Minneapolis
‡ Devereaux, Thomas J. ... Wayzata
† DeWall, Richard ... Minneapolis
Dickman, Roy W. ... Minneapolis
‡ Diefenbach, Eugene J. ... Minneapolis

	Diehl, Harold S.	New York
	Dierker, Heinrich A.	Minneapolis
	Diessner, Henry D.	Minneapolis
	Doan, Robert E.	Wayzata
	Donatelle, Edward P.	Minneapolis
	Dorge, Richard I.	Minneapolis
	Dorsey, George C., Jr.	Minneapolis
	Doscherholmen, Alfred	Minneapolis
	Doxey, Gilbert L.	Minneapolis
	Doyle, Lawrence O.	Minneapolis
‡	Drake, Charles R.	Minneapolis
	Dredge, Thomas E., Jr.	Minneapolis
	Drill, Herman E.	Hopkins
	Duff, Edwin R.	Minneapolis
	Dummer, Donald J.	New Brighton
	Dunlap, Earl H.	Minneapolis
	Dupont, Joseph A.	Excelsior
	Duryea, Marbry	Minneapolis
	Duryea, Willis M.	Minneapolis
	Duryea, Willis M., Jr.	Minneapolis
	Dvorak, Benjamin A.	Minneapolis
	Dwan, Paul F.	Minneapolis
	Dworsky, Samuel D.	Minneapolis
	Eder, Walter P.	Minneapolis
	Ehrenberg, Claude J.	Minneapolis
	Ehrlich, S. Paul	Minneapolis
	Eich, Matthew A.	Minneapolis
	Eichhorn, Edmund P., Jr.	Minneapolis
	Eisenstadt, David H.	Minneapolis
	Eisenstadt, William S.	Minneapolis
	Eitel, George D.	Minneapolis
	Eli, Earl W.	Minneapolis
‡	Ellison, David E.	Minneapolis
	Ellison, Ellis	Minneapolis
	Ellison, Evan S.	Minneapolis
	Emond, Albert J.	Farmington
	Emond, Joseph S.	Farmington
	Engel, Joseph P.	Minneapolis
	Engelhart, Peter C.	Minneapolis
	Englund, Elvin F.	Minneapolis
	Engstrand, Oscar J.	Minneapolis
	Erickson, Clifford O.	Minneapolis
	Erickson, Laurence F.	Minneapolis
	Erickson, Myron E.	Minneapolis
	Erickson, Reuben F.	Minneapolis
	Esensten, Sidney	Minneapolis
	Ettinger, Milton G.	Minneapolis
	Etzwiler, Donnell D.	Minneapolis
	Evans, Edward T.	Minneapolis
	Evans, Robert D.	Minneapolis
	Fahr, George E.	Minneapolis
	Fansler, Walter A.	Minneapolis
	Feeney, John M.	Minneapolis
	Feigal, David W.	Wayzata
	Feinberg, Philip	Minneapolis
	Feinberg, Samuel B.	Minneapolis
	Feinstein, Julius Y.	Minneapolis
	Fenger, Ejvind P. K.	Oak Terrace
	Fetzek, Albert D.	Minneapolis
	Field, Charles W.	Minneapolis
	Fifer, Ellen Z.	St. Louis Park
	Fifer, William R.	St. Louis Park
	Fingerman, David L.	Minneapolis
	Fink, Leo W.	Minneapolis
	Fink, Robert J.	Minneapolis
	Fink, Walter H.	Minneapolis
	Fisher, Don H.	Minneapolis
	Fisher, Isadore	Minneapolis
	Fieldstad, C. Alford	Minneapolis
	Fleeson, William H.	Minneapolis
	Fleming, Dean S.	Minneapolis
	Fliehr, Richard R.	Minneapolis
	Foker, Leslie W.	Minneapolis
	Folsom, Louis B.	Minneapolis
	Ford, William H.	Minneapolis
	Foster, Orley W.	Minneapolis
‡	Fowler, L. Haynes	Newport Beach, Calif.
	Fox, Donald P.	Tanganyika, East Africa
	Fox, James Rogers	Minneapolis
	Frane, Donald B.	Minneapolis
	Fredericks, George M.	Minneapolis
	Freeman, Craig W.	Minneapolis
	Freeman, Donald W.	St. Louis Park
	French, Lyle A.	Minneapolis
	Frey, Richard J.	Minneapolis
	Friberg, Joseph B.	Minneapolis
	Fried, Louis A.	Minneapolis
	Friedell, Aaron	Minneapolis
	Friedell, George	St. Louis Park
	Friedman, Harry S.	Minneapolis
	Friend, Charles A.	Minneapolis
	Frost, John B.	Minneapolis
	Frost, Russell H.	St. Paul
	Frykman, Howard M.	Minneapolis
	Frys, Russell N.	Minneapolis
	Fuller, Alice H.	Minneapolis
	Funk, Victor K.	Oak Terrace
	Furman, L. Christine	Minneapolis
	Fusaro, Ramon M.	Minneapolis
	Gaard, Richard C.	Minneapolis
	Galejs, Aina	Minneapolis
	Gallett, Lester E.	Minneapolis
	Galligan, Margaret Mary D.	Minneapolis
	Gammell, John H.	Minneapolis
‡	Garamella, Joseph J.	Minneapolis
‡	Garske, George L.	Minneapolis
	Garten, Joseph L.	Minneapolis
‡	Garvey, James T.	Minneapolis
	Gault, Neal L., Jr.	APO-San Francisco
†	Gault, Sarah J.	APO-San Francisco
‡	Gaviser, David	Minneapolis
	Geller, Joseph	Minneapolis
‡	George, Vane P., Jr.	Minneapolis
‡	Gibbs, Robert W.	Minneapolis
‡	Giebenhain, John N.	Minneapolis
‡	Giere, Joseph C.	Minneapolis
‡	Giere, Richard W.	Minneapolis
	Gilbert, Maurice G.	Minneapolis
	Gilbertsen, A. Sigrid	Minneapolis
	Gilbertsen, Victor A.	Minneapolis
	Gingold, Benjamin A.	Minneapolis
‡	Glaeser, John H.	Minneapolis
	Godfrey, H. Wilson	Minneapolis
‡	Gold, David	Minneapolis
‡	Goldberg, Isadore M.	Minneapolis
	Goldberg, Marvin E.	Minneapolis
‡	Goldman, Theodore I.	Minneapolis
‡	Goldner, Meyer Z.	Minneapolis
‡	Goltz, Robert W.	Minneapolis
	Good, Gary	Minneapolis
‡	Good, Hoff D.	Minneapolis
	Goodchild, William R.	Minneapolis
	Gordon, John R.	Minneapolis
	Gordon, Philip E.	Minneapolis
‡	Gordon, Sewell S.	St. Louis Park
	Grant, Suzanne	Minneapolis
†‡	Gratzek, Frank R.	Anoka
	Gray, Royal C.	Minneapolis
	Green, Clayton Robbie	Excelsior
	Green, Robert A.	St. Louis Park
‡	Greenberg, Albert J.	Minneapolis
	Greene, Leonard H.	Minneapolis
‡	Greenfield, Irving	Minneapolis
†	Greisheimer, Esther M.	Philadelphia, Pa.
	Grimes, Marian	Minneapolis
‡	Grimmell, Francis J.	Minneapolis
	Grismer, Jerome T.	Minneapolis
‡	Gronvall, Paul R.	Minneapolis
‡	Grotting, John K.	Minneapolis
	Gruys, Robert I.	Minneapolis
‡	Gullickson, Glenn Jr.	Minneapolis
‡	Gunlaugson, Frederick G.	Minneapolis
‡	Gustafson, Paul O.	Minneapolis
‡	Gustason, Harold T.	Minneapolis
	Haberer, Helen R.	Minneapolis
‡	Haberle, Charles A.	Minneapolis
#	Hagen, Kristofer	Minneapolis
‡	Hagen, Wayne S.	Minneapolis
*†	Haggard, George D.	Minneapolis
‡	Hall, Harry B.	Minneapolis
‡	Hall, Wendell H.	Minneapolis
	Hambidge, Gove J.	Minneapolis
‡	Hamel, Joseph I.	Minneapolis
	Hammerstad, Lynn M.	Minneapolis
	Hammerstrom, Robert N.	Minneapolis
‡	Hannah, Hewitt B.	Minneapolis
‡	Hansen, Cyrus O.	Minneapolis
‡	Hansen, Erling W.	Minneapolis
	Hansen, Olga S.	Minneapolis
‡	Hansen, Rollin M.	Minneapolis
‡	Hanske, Edward A.	Minneapolis
‡	Hanson, Harlow J.	Minneapolis
	Hanson, Harold B.	Minneapolis
	Hanson, Harold W.	Minneapolis
†	Hanson, Henry V.	St. Paul
‡	Hanson, Malcolm B.	Minneapolis
‡	Hanson, Mark C. L.	Minneapolis
	Hanson, Mildred S.	Minneapolis
‡	Hanson, William A. H.	Minneapolis
	Hanson, William B.	Minneapolis
	Happe, Lawrence J.	Minneapolis
‡	Harris, Leon D.	Minneapolis
‡	Harrison, William C.	Minneapolis
	Hartman, Evelyn E.	Minneapolis
	Hartwig, John A.	Minneapolis
‡	Hass, Frederick M.	Minneapolis
‡	Hastings, DeForest R.	Minneapolis
‡	Hastings, Donald W.	Minneapolis
‡	Hauge Erling T.	Minneapolis
‡	Haugen, George W.	Minneapolis
	Haugen, John A.	Minneapolis
‡	Hauser, Donald C.	Minneapolis
†	Hauser, George W.	Seattle, Wash.
‡	Havel, Robert J.	Minneapolis
‡	Haven, Walter K.	Minneapolis
‡	Hawkinson, Raymond P.	Minneapolis
‡	Hay, Lyle J.	Minneapolis
*	Hayes, James M.	San Diego, Calif.
	Hays, Albert T.	Minneapolis
	Haywa, E. William	Minneapolis
‡	Head, Douglas P.	Minneapolis
‡	Hebbel, Robert	Minneapolis
	Hedrick, William L.	Minneapolis
	Hempel, Dean J.	Minneapolis
*†	Hendrickson, John F.	Minneapolis
‡	Henrikson, Earl C.	Minneapolis
†	Henry, Clifford E.	Kirksville, Mo.
	Herbert, Willis L.	Minneapolis
‡	Hermann, Harold W.	Minneapolis
	Hiatt, John A.	Minneapolis
	Hildebrandt, Walter C.	Minneapolis
	Hilgermann, George O.	Minneapolis
	Hill, Earl	Minneapolis
‡	Hill, Elmer M.	Minneapolis
†	Hillis, Samuel J.	E. Bradenton, Fla.
	Hinckley, Robert G.	Minneapolis
‡	Hitchcock, Claude R.	Minneapolis
‡	Hodges, Kenneth V.	Minneapolis
	Hoffbauer, Frederick W.	Minneapolis
‡	Hoffert, Henry E.	Minneapolis
‡	Hoffman, Roy A.	Minneapolis
‡	Hoffman, Walter L.	Minneapolis
	Hofmann, Gerald N.	Minneapolis
‡	Holmberg, Conrad J.	Minneapolis
‡	Holzapfel, Fred C.	Minneapolis
	Hopperstad, J. Jerome	Minneapolis
‡	Hoppes, Emerson E.	Minneapolis
	Horns, Howard L.	Minneapolis
‡	Horns, Richard C.	Minneapolis
	Hoseth, Wayne L.	Minneapolis
†	Houkom, Bjarne	Minneapolis
‡	Houle, Rollin J.	New Brighton
	Hovland, Melvin L.	Minneapolis
‡	Howard, Robert B.	Minneapolis
	Howard, Solomon, E.	Minneapolis
‡	Howell, Carter W.	Minneapolis
	Hoyt, C. Sherman	Minneapolis
†	Huenekens, Edgar J.	Minneapolis
	Hultkranz, Rudolph E.	Minneapolis
‡	Hulteng, Donald B.	Minneapolis
	Hurr, Maland C.	Minneapolis
	Hutchinson, Dorothy W.	Oak Terrace
‡	Hymes, Charles	Minneapolis
	Ide, Arthur W., Jr.	Minneapolis
‡	Idstrom, Linneus G.	Minneapolis
‡	Indeck, Walter	Minneapolis
†	Irvine, Harry G.	Minneapolis
	Iverson, Eleanor B.	Minneapolis
‡	Iverson, Rolf M.	Minneapolis
	Jackson, J. Albert	Minneapolis
	Jackson, Richard L.	Minneapolis
‡	Jacobson, Wyman E.	St. Louis Park
	Jaffe, Manuel O.	Minneapolis
‡	Janda, George W., Jr.	Minneapolis
‡	Jay, Alan R.	Minneapolis
	Jay-Jedrzeiewski, Walter	Minneapolis
‡	Jefferies William L.	St. Louis Park
‡	Jensen, Harry C.	Minneapolis
*†	Jensen, Marius J.	Minneapolis
	Jensen, Nathan K.	Minneapolis
	Jensen, Reynold A.	Hopkins
‡	Jepson, William W.	Minneapolis
	Jerome, Bourne	Minneapolis
	Jerome, Elizabeth B.	Minneapolis
	Jeub, Robert P.	Minneapolis
	Johnson, Angelo G.	Minneapolis
‡	Jonhson, Arthur B.	Minneapolis
‡	Johnson, David R.	Minneapolis
‡	Johnson, Edward A.	Minneapolis
‡	Johnson, Frank E.	Minneapolis
‡	Johnson, Harry A.	Minneapolis
†‡	Johnson, James A.	Minneapolis
‡	Johnson, John W.	Minneapolis
‡	Johnson, Malcolm R.	Minneapolis
	Johnson, Norman P.	Minneapolis
	Johnson, Norman Paul	Minneapolis
‡	Johnson, Norton T.	Minneapolis
‡	Johnson, Paul E.	Minneapolis
‡	Johnson, Reinald G.	Minneapolis
†‡	Johnson, Reuben A.	Minneapolis
‡	Johnson, Richard S.	Minneapolis
‡	Johnson, Robert E.	Minneapolis
	Johnson, Youbert T.	Minneapolis
	Jones, David G.	Minneapolis
†‡	Jones, Herbert W., Jr.	Minneapolis
‡	Jones, Richard H.	Minneapolis
	Jordan, Donald V.	Minneapolis
‡	Judd, Allen S.	Minneapolis
‡	Judd, Walter H.	Washington, D. C.
‡	Jurdy, Mitchell J.	Minneapolis
‡	Kadesky, Harold B.	Minneapolis
‡	Kalin, Oscar T.	Minneapolis
‡	Kallestad, Leonard L.	Wayzata
	Kantar, Bruce L.	Minneapolis
‡	Kaplan, Harold A.	Minneapolis
‡	Kaplan, J. Jacob	Minneapolis
‡	Karleen, Conrad I.	Minneapolis
‡	Karlen, Markle	Minneapolis
	Kasper, Robert E.	Minneapolis
	Kaufman, Herschel J.	Minneapolis
‡	Kelby, Gjert M.	Minneapolis
‡	Kelly, Charles F.	Minneapolis
‡	Kelly, John P.	Minneapolis
	Kelly, John T.	Minneapolis
	Kennedy, Byrl J.	Minneapolis
†	Kennedy, Claude C.	Minneapolis
†	Kennedy, Jane F.	Minneapolis
‡	Kerkhof, Arthur C.	Minneapolis

	Kim, Mark K.	Minneapolis
‡	Kimmel, George C.	Minneapolis
	King, Frances W.	Oak Terrace
‡	Kinsella, Thomas J.	Minneapolis
	Kjenaas, Ervin A.	Hastings
‡	Knapp, Miland E.	Minneapolis
†‡	Knight, Ralph T.	Minneapolis
†	Knight, Ray R.	Minneapolis
	Knudsen, Helen L.	Minneapolis
*‡	Koepcke, Gerald M.	Minneapolis
	Kogl, Richard C.	Minneapolis
	Kohlhase, Robert E.	Minneapolis
	Kolars, Charles P.	Minneapolis
†	Koller, Hermann M.	Minneapolis
†	Koller, Louis R.	Minneapolis
	Koller, Robert L.	Hopkins
	Korchik, John P.	Minneapolis
*	Kosiak, John	Minneapolis
	Kottke, Frederic J.	Minneapolis
	Koucky, Rudolph W.	Minneapolis
‡	Kovack, Freeman D.	Minneapolis
	Kozak, Michael J.	Minneapolis
	Krafchuk, John D.	Minneapolis
‡	Krafft, Walter E.	Minneapolis
	Kragh, Lyle V.	Minneapolis
‡	Kremen, Arnold J.	Minneapolis
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‡	Zarling, V. Richard	Minneapolis
‡	Zaworski, Leo A.	Minneapolis
	Zierold, Arthur A.	Minneapolis
‡	Zinter, Ferdinand A.	Minneapolis
†‡	Ziskin, Thomas	Minneapolis

KANDIYOHI-SWIFT-MEEKER COUNTY MEDICAL SOCIETY

Kandiyohi, Swift and Meeker Counties
Regular meetings, 3rd Thursday
Annual meeting, 3rd Thursday November
Number of members—51

	President	
	Opsahl, Lawrence J.	Willmar
	Secretary	
	Meinert, John K.	Willmar
‡	Allison, David D.	Litchfield
	Behrendt, Vera M.	Willmar
‡	Bosland, Howard G.	Willmar
‡	Carlon, Donald L.	Willmar
	Chunn, Stanley S.	Willmar
*†	Danielson, Karl A.	Litchfield
	Danielson, Lennox	Litchfield
‡	Dille, Donald E.	Litchfield
	Docksey, John W.	Willmar
‡	Drexler, Charles J.	Litchfield
‡	Dunstan, Paul L.	Willmar
	Eberley, Tobe S.	Benson
‡	Ellinger, Albert J.	Willmar
†	Fedor, Robert D.	Litchfield
	Frederickson, Alice C.	Willmar
	Gaebe, Milton B.	Clara City
	Giere, Silas W.	Benson
‡	Gilman, Lloyd C.	Willmar
	Griffin, Richard P.	Benson
‡	Guy, Jack A.	New London
‡	Helwig, Karl L., Jr.	Kerkhoven
‡	Hinderaker, Harris P.	Willmar
‡	Hinz, Walter E.	Willmar
‡	Hodapp, Robert V.	Willmar
†	Holm, Donald F.	Minneapolis
	Houts, Joseph C.	Dassel
	Jacobs, Douglas L.	Willmar
†	Jacobs, Johannes C.	Willmar
‡	Johnson, Marvin W.	Dassel
‡	Kaufman, Edward J.	Appleton
	McCarthy, Austin M.	Willmar
	Macklin, William E., Jr.	Willmar
‡	Meinert, John K.	Willmar
‡	Michels, Roger P.	Willmar
‡	Munneke, Lyle	Clara City
	Nelson, Robert H.	Benson
	Nolen, William A.	Litchfield
†	O'Connor, Daniel C.	Eden Valley
‡	Olson, Gregory M.	Litchfield
‡	Opsahl, Lawrence J.	Willmar
‡	Peterson, Willard E.	Willmar
†	Porter, Oliver M.	Minneapolis
‡	Proeschel, Ray K.	Willmar
‡	Rorem, Joseph A.	Appleton
‡	Ruchie, Warren H.	Willmar
	Rygh, Harold N.	Atwater
	Schnell, Frederick S.	Litchfield
	Skaife, William F.	Benson
†‡	Solsem, Frederick N. S.	Spicer
‡	Wagner, Norman W.	Benson
	Wilmot, Cecil A.	Litchfield
	Wilmot, Harold E.	Litchfield

LYON-LINCOLN COUNTY MEDICAL SOCIETY

Lyon and Lincoln Counties
Regular meetings, 6 meetings Spring and Fall
Annual meeting, last Tuesday in October
Number of members—31

	President	
	Taintor, Ronald W.	Marshall
	Secretary	
	Hedenstrom, Philip C.	Marshall
‡	Bodaski, Albert A.	Tyler
‡	Eckdale, John E.	Marshall
‡	Engwall, Richard	Ivanhoe
‡	Ferguson, William C.	Walnut Grove
‡	Ford, Burton C.	Marshall
*†	Gray, Frank D.	Marshall
‡	Guldseth, Gustav J.	Hendricks
‡	Hedenstrom, Philip C.	Marshall
‡	Hermanson, Peter E.	Hendricks
†	Hoidale, Andrew D.	Tracy
‡	Johnson, C. Percy	Tyler
‡	Kreuzer, Titus C.	Marshall
‡	Larson, Milo H.	St. Peter
‡	Lee, Norman J.	Tracy
‡	Monson, Leonard J.	Canby
	Muesing, Mark A.	Tyler
‡	Murphy, Joseph E.	Marshall
‡	Myers, John W.	Canby
‡	Olson, Robert T.	Canby
‡	Peterson, Kenneth A.	Marshall
	Phelps, Robert D.	Marshall
‡	Remsberg, Robert R.	Tracy
	Rohrer, Christian A.	Marshall
	Smith, Lloyd A.	Willmar
‡	Taintor, Ronald W.	Marshall
	Thill, Leonard J.	Balaton
‡	Thompson, Carl O.	Hendricks
†‡	Vadheim, Alfred L.	Brookings, S. D.
†‡	Valentine, Walter H.	Tracy
	Vandersluis, Charles W.	Minneota
‡	Workman, Warner G.	Tracy
†‡	Yaeger, Wilbert W.	Excelsior

McLEOD COUNTY MEDICAL SOCIETY

McLeod County
Regular meetings, 3rd Thursday of each month
Annual meeting, 3rd Thursday in December
Number of members—21

	President	
	Bretzke, Carl O.	Hutchinson
	Secretary	
	Brink, Donald W.	Hutchinson
‡	Bretzke, Carl O.	Hutchinson
‡	Brink, Donald M.	Hutchinson
‡	Carroll, John J.	Winsted
‡	Chervenak, William A.	Winsted
‡	Griebie, Grant L.	Brownton
‡	Howell, Milton M.	Glencoe
‡	Huebert, Dan W.	Hutchinson
‡	Jensen, Alvin M.	Brownton
‡	Lippmann, Elmer W.	Hutchinson
‡	McCoy, Donald E.	Glencoe
‡	McNeil, Maurice R.	Glencoe
‡	Navratil, Donald R.	Glencoe
‡	Neumaier, Arthur	Glencoe
‡	Peterson, Kenneth H.	Hutchinson
†	Rayner, Ralph R.	St. Paul
	Sahr, Walter G. C.	Hutchinson
‡	Selmo, Joseph D.	Norwood
‡	Sheppard, Charles G.	Hutchinson
‡	Smith, George R.	Hutchinson
‡	Smyth, John J.	Lester Prairie
‡	Truesdale, Clark W.	Glencoe

MOWER COUNTY MEDICAL SOCIETY

Mower County
Regular meetings, last Friday of the month
Annual meeting, November
Number of members—44

	President	
	Osborn, Donald O.	Austin
	Secretary	
	Rosenthal, F. Harold	Austin
‡	Anderson, David P., Jr.	Austin
‡	Anderson, Harold J.	Austin
‡	Anderson, Wallace R.	Austin
‡	Barber, Tracy E.	Austin
‡	Cronwell, Bernhard J.	Austin
	Elliott, Harold J.	Hayfield
‡	Fisch, Herbert M.	Austin
‡	Flanagan, Leonard G.	Austin
‡	Hagen, John D.	Austin
†	Havens, John G. W.	Austin
†	Hegge, Olav H.	Austin
†	Hertel, Garfield E.	Austin
‡	Hesla, Inman A.	Austin
‡	Leck, Paul C.	Austin
‡	Lommen, Peter A.	Austin
‡	Lommen, Peter A., Jr.	Austin
‡	Mathers, J. E.	Austin
†	McKenna, Elizabeth M.	San Francisco
†	McKenna, Jay K.	Austin
†	Melzer, George R.	White Bear Lake
‡	Miller, Herman	Austin
	Morse, Morton P.	LeRoy
‡	Muchow, Gene C.	Austin
‡	Nesse, James A.	Austin
‡	Osborn, Donald O.	Austin
‡	Patten, John C.	Austin
‡	Paulus, Harold E.	Austin
‡	Peterson, Stanley C.	Austin
‡	Peterson, W. H.	Austin
‡	Roberts, George A.	Austin
‡	Robertson, Paul A.	Austin
‡	Rosenthal, F. Harold	Austin
	Schneider, Paul J.	Adams
	Schwartz, Carl A.	Austin
‡	Seery, Thomas M.	Austin
‡	Sheedy, Chester L.	Austin
‡	Smythe, Lowell	Austin
‡	Stahl, George W.	Austin
‡	Taufic, Mansur	Austin
‡	Thomson, James M.	Austin
‡	Todd, John C.	Austin
‡	Twigas, Leo F.	Austin
‡	Van Cleve, Horatio P., Jr.	Austin
‡	Wright, Robert R.	Austin

NICOLLET-LE SUEUR COUNTY MEDICAL SOCIETY

Nicollet and Le Sueur Counties
Regular meetings, first Monday of even months
Annual meeting, December
Number of members—28

	President	
	Haes, Julius E.	St. Peter
	Secretary	
	Strathern, Carleton	St. Peter
	Bergeron, Dale A.	LeSueur
†	Branham, Donald S.	Deer Park, Wis.
‡	Canfield, Wayne W.	St. Peter
‡	Curtis, Rauen A.	Le Center
	Engstrom, George	St. Peter
†	Erickson, Swan	Los Angeles, Calif.
	Gislason, Solveig T.	St. Peter
‡	Gridley, John W.	Arlington
‡	Grimes, Burton P.	St. Peter
‡	Haes, Julius E.	St. Peter
‡	Hiniker, Peter J.	Le Sueur
	Huffington, Herb L., Jr.	Waterville
†	Kabrick, Ola A.	St. Peter
	Kath, Reinhard H.	Arlington
	Knoche, Harvey A.	Gaylord
	Lenander, Melvin E.	St. Peter
	Limbeck, Donald A.	LeSueur
	Linnell, Leonard	St. Peter
	Olmanson, Edmund G.	St. Peter
‡	Olmanson, M. Donald	St. Peter
	Olmanson, Vern C.	St. Peter
	Russ, Homer	Le Center
‡	Sjostrom, Lawrence E.	St. Peter
‡	Sonnesyn, Nels N.	Le Sueur
‡	Strathern, Carleton	St. Peter
†	Strathern, Fred P.	St. Peter
‡	Thompson, A. Henry	St. Peter
‡	Wohlrabe, Clarence F.	North Mankato

PARK REGION DISTRICT AND COUNTY MEDICAL SOCIETY

Douglas, Grant, Otter Tail and Wilkin Counties
Regular meetings, March, June and September
Annual meeting, December
Number of members—66

	President	
	Lewis, Charles W.	Henning
	Secretary	
	Kevern, Jay L.	Henning
	Arndt, Harry W.	Detroit Lakes
	Baker, Jeannette L.	Fergus Falls
	Baker, Norman	Fergus Falls
‡	Bateman, Clarence	Breckenridge
†	Blakey, Adam R.	Osakis
‡	Boline, Clifford A.	Battle Lake
‡	Cain, James H.	Alexandria
	Campbell, Dennis V.	Fergus Falls
‡	Carlson, Carl E.	Alexandria
	Carlson, Homer J.	Pelican Rapids
	Clifford, George W.	Alexandria
‡	Coleman, Edward L.	Fergus Falls
‡	Daehlin, Rolf	Fergus Falls
‡	Doms, Vernon A.	Elbow Lake
	Eddy, Richard L.	Alexandria
	Emerson, Edwin E.	Osakis
‡	Estrem, Ralph L.	Fergus Falls
‡	Estrem, Robert D.	Fergus Falls
‡	Geiser, Peter M.	Alexandria
*‡	Hamlon, John S.	Fergus Falls
	Hanson, Everett C.	New York Mills
‡	Heegaard, William G.	Alexandria
†‡	Heiberg, E. A.	Fergus Falls
	Helseth, Hovald K.	Fergus Falls
‡	Hom, Leong Y. W.	Battle Lake
‡	Hunt, William	Fergus Falls
‡	Jacobson, Clifford W.	Breckenridge
‡	Kevern, Jay L.	Henning
‡	Kippen, Neil	Breckenridge
‡	Korda, Henry A.	Pelican Rapids
	Kuhlman, Vernon G.	Alexandria
	Larson, Arthur N.	Fergus Falls
	Larson, Dorette W.	Moose Lake
*†	Leibold, Herbert H.	Parkers Prairie
†	Lewis, Arthur J.	Henning
	Lewis, Charles W.	Henning
	Lindquist, Dale C.	Elbow Lake
	Lu, Cheng-en	Fergus Falls
‡	Lund, Carl J. T.	Fergus Falls
	May, Robert B.	Fergus Falls
†	Mortenson, Nels G.	Minneapolis
‡	Mouritsen, Glenn J.	Fergus Falls
‡	Nelson, Roy A.	Fergus Falls
	Nelson, Wilburn O. B.	St. Peter
‡	Ness, Richard A.	Fergus Falls
‡	O'Brien, Louis T.	Breckenridge
	Ostergaard, Erling	Arizona
	Parson, E. Lillian B.	Elbow Lake
†	Patterson, William L.	Fergus Falls
†‡	Paulson, Theodore S.	Fergus Falls
	Peikert, Carl	Elbow Lake
	Perkins, Douglass E.	Alexandria
	Reinhardt, James H.	Alexandria
	Rockwood, Philo H.	Fergus Falls
†	Satersmoen, Theodore	Pelican Rapids
	Sather, Edgar R.	Alexandria
	Schamber, Walter F.	Parkers Prairie
	Schoeneberger, P. B.	Perham
‡	Sethre, Arthur E.	Fergus Falls
‡	Shaver, Ward	Fergus Falls
	Singbeil, J. H.	Breckenridge
	Stahn, Louis H.	Fergus Falls
‡	Stemsrud, Harold L.	Alexandria
	Syverson, Leslie A.	Fergus Falls
‡	Tanquist, Edwin J.	Alexandria
	Tanquist, Edwin J., Jr.	Alexandria
	Warner, James J.	Perham
‡	Wasson, Loren F.	Alexandria

RAMSEY COUNTY MEDICAL SOCIETY

Ramsey County
Regular meetings, last Monday of each month except June, July and August
Annual meeting in January
Number of members—522

	President	
	Cooper, Charles C.	St. Paul
	Secretary	
	Skinner, Abbott	St. Paul
	Exec. Sec'y	
	Olson, Mrs. Eleanor	St. Paul
‡	Abrams, Alexander, Jr.	St. Paul
‡	Adair, Albert F., Jr.	St. Paul
	Adams, Harold R.	St. Paul
*†	Ahrens, Albert E.	St. Paul
‡	Ahrens, Robert M.	St. Paul
‡	Alden, John F., Jr.	St. Paul
‡	Alton, Donald	St. Paul
†	Ambrus, Laszlo	St. Paul
‡	Amerongen, Werner W.	St. Paul
†	Anderson, James J.	St. Paul
	Anderson, Margaret C.	St. Paul
‡	Arnquist, Andrew S.	St. Paul
‡	Arny, Frederick P.	St. Paul
‡	Arzt, Philip K.	St. Paul
‡	Aurelius, J. Richards	St. Paul
‡	Ausman, Duane R.	St. Paul
‡	Austrian, Sol	St. Paul
‡	Babb, Frank S.	St. Paul
‡	Baird, Raymond L.	St. Paul
	Balcome, Milton M.	St. Paul
	Barnett, Joseph M.	St. Paul
†	Barsness, Nellie O. N.	St. Paul
	Bauer, Eugene L.	St. Paul
‡	Beck, Charles J.	North St. Paul
‡	Beech, Raymond H.	St. Paul
‡	Beek, Harvey O.	St. Paul
‡	Beer, John J.	St. Paul
‡	Bellomo, James	St. Paul
‡	Benepe, James L.	St. Paul
	Benthack, Elaine M.	St. Paul
†	Bernhisel, Harris G.	St. Paul
	Bernier, M. J.	North St. Paul
‡	Bernstein, William C.	St. Paul
‡	Bicek, Joseph F.	St. Paul
*†	Binger, Henry E.	Phoenix, Arizona
‡	Bjornson, Robert G. B.	St. Paul
	Black, Earl J.	St. Paul
	Blackburn, Henry W., Jr.	St. Paul
‡	Blomberg, William R.	St. Paul
‡	Blumberg, Henry B.	St. Paul
†	Bock, Rolland A.	St. Paul
‡	Bonello, Frank J.	St. Paul
‡	Borg, Joseph F.	St. Paul
†	Bouma, Lewis R.	St. Paul
	Bouthilet, Florence J.	St. Paul
†	Bray, Elwyn R.	St. Paul
‡	Briggs, John F.	St. Paul
‡	Broadie, Thomas E.	St. Paul
‡	Brodie, Walter D.	St. Paul
	Brown, Ian A.	St. Paul
	Brown, James E., Jr.	St. Paul
*†	Brown, John C.	Los Gatos, Calif.
	Brown, John M.	West St. Paul
‡	Bulinski, Theodore J.	St. Paul
‡	Burch, Edward P. II	St. Paul
‡	Burklund, Edwin C.	St. Paul
‡	Burlingame, David A.	St. Paul
‡	Burmeister, Richard O.	St. Paul
*†	Burns, Robert M.	St. Paul
†	Burton, Carl G.	St. Paul
‡	Bush, Robert P.	St. Paul
‡	Busher, Herbert H.	St. Paul
‡	Byrne, William J.	St. Paul
‡	Cain, Clark L.	St. Paul
	Calin, Stanford H.	St. Paul
*	Callahan, Francis F.	St. Paul
‡	Canine, James L.	South St. Paul
‡	Carley, Walter A.	St. Paul
	Cederleaf, Cherry B.	Mahtomedi
	Chadbourn, Charles R.	St. Paul
†‡	Chatterton, Carl C.	St. Paul
†‡	Christiansen, Andrew	St. Paul
	Clark, Henry B., Jr.	Minneapolis
‡	Cochrane, Byron B.	St. Paul
	Coddon, Walter D.	St. Paul
	Cohen, Ellis N.	St. Paul
‡	Colby, Woodard L.	St. Paul
	Cole, Wallace H.	St. Paul
‡	Coleman, John B.	St. Paul
*†	Collie, Henry G.	St. Petersburg, Fla.
‡	Connolly, Coleman J.	St. Paul
	Connolly, Joseph P.	South St. Paul
†	Connor, Charles E.	St. Paul
‡	Cook, C. Kenneth	St. Paul
‡	Cooper, Charles C.	St. Paul
†	Countryman, Roger S.	Saratoga, Calif.
‡	Craig, David M.	St. Paul

	Crowley, James H.	St. Paul
‡	Crudo, Vincent D.	St. Paul
	Crum, Arthur Z.	St. Paul
‡	Crump, James W.	St. Paul
‡	Culligan, John A.	St. Paul
‡	Culver, Lucian G.	St. Paul
‡	Cumming, E. Dale	St. Paul
	Dahl, Diane A.	Mahtomedi
‡	Davis, Edward V.	St. Paul
	Dawson, James R.	St. Paul
	Decker, Charles H.	St. Paul
‡	Derauf, Benjamin I.	St. Paul
‡	Derauf, Donald E.	St. Paul
‡	Deters, Donald C.	St. Paul
‡	Drake, Carl B.	St. Paul
	Dunn, Robert C.	St. Paul
	Dyrdal, Paul J.	St. Paul
‡	Earl, George A.	St. Paul
‡	Earl, John R.	St. Paul
	Edwards, J. Willard	St. Paul
	Edwards, Jesse E.	St. Paul
	Edwards, Joseph W.	St. Paul
	Edwards, Lloyd G.	St. Paul
‡	Edwards, Thomas J.	St. Paul
‡	Eelkema, Herman H.	St. Paul
‡	Eginton, Charles T.	St. Paul
	Emerson, Edward C.	St. Paul
‡	Emmons, Robert W.	St. Paul
‡	Endress, Edward K.	St. Paul
‡	Enroth, Oscar E.	St. Paul
†	Ernest, George C. H.	Lakeland, Fla.
‡	Ersfeld, Murray P.	St. Paul
†	Eshelby. E. C.	St. Paul
	Falk, Abraham	St. Paul
	Farkas, John V.	St. Paul
‡	Fee, John G.	St. Paul
‡	Felder, Davitt A.	St. Paul
‡	Felion, Arthur J.	St. Paul
‡	Fesler, Harold H.	St. Paul
	Field, Anthony H.	Farmington
‡	Fink, Daniel L.	St. Paul
‡	Fischer, Robert F.	St. Paul
‡	Fisher, Dan W.	St. Paul
‡	Flanagan, Harold F.	St. Paul
‡	Flannery, Hubert F.	St. Paul
‡	Flom, Reynold P.	St. Paul
‡	Flom, Robert S.	St. Paul
‡	Flynn, Louis L., Jr.	St. Paul
‡	Flynn, Robert A.	St. Paul
†	Fogarty, Charles W.	St. Paul
‡	Fogarty, Charles W., Jr.	St. Paul
‡	Fogelberg, Emil J.	St. Paul
†	Foley, Frederic E. B.	St. Paul
	Forsythe, James R.	St. Paul
‡	Fox, LeRoy J.	St. Paul
‡	Freeman, Charles D., Jr.	St. Paul
	Fritz, Wallace L.	St. Paul
‡	Froats, Charles W.	St. Paul
‡	Fuller, Benjamin F.	St. Paul
	Funke, Joyce L.	St. Paul
‡	Gaertner, Frank M. J., Jr.	St. Paul
‡	Galligan, John J.	St. Paul
‡	Garbrecht, Arthur W.	St. Paul
‡	Gardner, Walter P.	St. Paul
	Garrow, Douglas M.	St. Paul
‡	Gehlen, Joseph N.	St. Paul
	Gibbs, Edward C.	St. Paul
‡	Gillespie, Delmar R.	St. Paul
‡	Gilsdorf, Donald A.	St. Paul
‡	Gleason, Wallace A.	St. Paul
‡	Goldsmith, Joseph W.	St. Paul
†‡	Goltz, Edward V.	St. Paul
	Goodman, Ernest	St. Paul
*	Grant, Hendrie W.	St. Paul
	Gray, Edward F.	White Bear Lake
‡	Guenther, Dean E.	West St. Paul
	Hagen, Paul S.	St. Paul
‡	Hakanson, Erick Y.	St. Paul
‡	Hall, Barnard	St. Paul
‡	Hall, William E.	St. Paul
‡	Hammes, Ernest M.	St. Paul
‡	Hammes, Ernest M., Jr.	St. Paul
‡	Hannon, Donald W.	St. Paul
†	Harbaugh, John T.	Minneapolis
‡	Harmon, Gaius E.	St. Paul
‡	Harris, John E.	Minneapolis
‡	Hartfiel, William F.	St. Paul
	Hartig, Marjorie	St. Paul
‡	Hauser, Victor P.	St. Paul
‡	Hayes, Albert F.	St. Paul
‡	Heck, William W.	St. Paul
	Hedenstrom, Charles W.	St. Paul
	Hedenstrom, Frank G.	St. Paul
†	Hedenstrom, Paul H.	White Bear Lake
	Hedlund, Charles J.	St. Paul
	Heilig, William R.	St. Paul
*	Henderson, Arthur J. G.	St. Paul
‡	Hengstler, William H.	St. Paul
	Herman, Samuel M.	St. Paul
	Hertz, Myron J.	St. Paul
‡	Hilger, Jerome A.	St. Paul
	Hilger, Laurence D.	St. Paul
‡	Hilker, Marcus D.	St. Paul
	Hiniker, Louis P.	St. Paul
‡	Ho, Shu Kang	St. Paul
‡	Hochfilzer, John J.	St. Paul
	Hodgson, Jane E.	St. Paul
†	Holcomb, O. William	St. Paul
	Hollinshead, William H.	St. Paul
‡	Holmen, Robert W.	St. Paul
‡	Holt, John E.	St. Paul
	Hopkins, G. Wendell	St. Paul
	Houlton, William H.	St. Paul
†	Howard, Merrill A.	St. Paul
‡	Howe, Newell W.	St. Paul
†	Huff, John	St. Paul
†‡	Hullsiek, Harold E.	St. Paul
	Hunter, Murray H.	Farmington
‡	Hunter, Samuel W.	St. Paul
‡	Hurwitz, Milton M.	St. Paul
‡	Husebye, Kjeld O.	St. Paul
†	Ide, Arthur W.	White Bear Lake
*	Ikeda, Kano	St. Paul
‡	Jackson, William C.	St. Paul
‡	James, Ellery M.	St. Paul
‡	James, John W.	St. Paul
‡	Janssen,Martin E.	St. Paul
	Jarvis, Bruce W.	St. Paul
	Jarvis, Charles W.	St. Paul
	Jarvis, Marilyn A.	St. Paul
‡	Jastram, Rupert M.	St. Paul
‡	Johanson, Waldemar G.	St. Paul
	Johnson, Carl E.	St. Paul
	Johnson, Carolyn A.	St. Paul
‡	Johnson, Herbert W.	St. Paul
‡	Johnson, Morris B.	St. Paul
‡	Johnson, Richard J.	St. Paul
†	Jones, E. Mendelssohn	St. Paul
	Joseph, Arnold H.	St. Paul
‡	Kamman, Gordon R.	St. Paul
	Kane, Dennis J.	St. Paul
	Kaplan, David H.	St. Paul
	Karon, Everett H.	St. Paul
	Karon, Irvine M.	St. Paul
‡	Kasper, Eugene M.	St. Paul
	Katz, Louis J.	Long Beach, Calif.
	Keefe, Rolland E.	St. Paul
‡	Kelly, Albert C.	St. Paul
‡	Kelly, Edward H.	St. Paul
‡	Kelsey, Chauncey M.	St. Paul
‡	Kenefick, Emmett V.	St. Paul
‡	Kenyon, Thomas J.	St. Paul
†‡	Kesting, Herman	St. Paul
†	King, George L.	Hudson, Wis.
‡	Knutson, Gerhard E.	St. Paul
‡	Knutson, Robert C.	St. Paul
	Kodres, Nina	St. Paul
‡	Kosiak, Michael	St. Paul
	Koza, Donald W.	St. Paul
‡	Krezowski, Thomas K.	St. Paul
‡	Kugler, Alex A.	St. Paul
‡	Kuske, Albert W.	St. Paul
‡	Kusske, Bradley W.	St. Paul
‡	Kusske, Douglas R.	St. Paul
‡	Lannin, Bernard G.	St. Paul
‡	Lannin, Donald R.	St. Paul
‡	Larrabee, Walter F., Jr.	St. Paul
	Larson, Eva Jane Ostergren	St. Paul
*	Larson, James T.	South St. Paul
‡	Larson, Kenneth R.	St. Paul
	Larson, Martin L.	St. Paul
‡	Laszewski, Franz von Zelberschwecht	St. Paul
	Lawton, James J., Jr.	St. Paul
†‡	Leahy, Bartholomew	St. Paul
‡	Leick, Richard M.	St. Paul
	Leitch, Archibald	St. Paul
†	Lepak, John A.	St. Paul
*†	Lerche, William	Cable, Wis.
‡	Lessard, Richard J.	St. Paul
	Leven, N. Logan	St. Paul
‡	Leverenz, Carleton W.	St. Paul
	Levitt, George X.	St. Paul
	Lewis, Joyce S., Jr.	St. Paul
‡	Lick, Charles L.	St. Paul
‡	Lick, Louis C.	St. Paul
‡	Lick, William J., Jr.	St. Paul
‡	Lien, Richard J.	St. Paul
†	Lightbourn, Edgar L.	Hastings
‡	Lilleberg, Norbert J.	St. Paul
‡	Lindell, Robert E.	St. Paul
	Lippman, Hyman S.	St. Paul
	Litkewitsch, Helene	St. Paul
‡	Loken, Selmer M.	South St. Paul
	Lowe, Alexander D.	South St. Paul
‡	Lowe, Earl R.	South St. Paul
	Lowe, Thomas A.	South St. Paul
‡	Lundholm, Arthur M.	Harris
	Lunzer, Richard G.	St. Paul
‡	Lynch, Francis W.	St. Paul
‡	McCain, Donovan L.	St. Paul
	McClanahan, Thomas S.	White Bear Lake
	McClellan, Robert J.	St. Paul
	McCloud, C. Naumann., Jr.	St. Paul
	McDaniel, Samuel P.	Lakeville
‡	McEwan, Alexander	St. Paul
‡	McGroarty, Brian J.	St. Paul
	McKenzie, Eva E.	St. Paul
‡	McNeill, John A.	St. Paul
‡	MacCornack, Robert L., Jr.	St. Paul
	MacLean, Lloyd D.	St. Paul
	Mackoff, Sam M.	Phoenix, Arizona
	Madland, Robert S.	St. Paul
‡	Malerich, J. Anthony	St. Paul
‡	Malerich, J. Anthony, Jr.	St. Paul
‡	Manlove, Charles H., Jr.	St. Paul
	Marks, Roger W.	St. Paul
‡	Martin, Dwight L.	St. Paul
†‡	Martineau, Joseph L.	St. Paul
	Mateo, Guillermo	St. Paul
	Matthews, James H.	Minneapolis
‡	Mazzitello, William F.	St. Paul
‡	Mears, Burtis J.	St. Paul
‡	Medelman, John P.	St. Paul
‡	Melancon, Joseph F.	St. Paul
‡	Menold, William F.	St. Paul
‡	Merrick, Robert L.	St. Paul
‡	Michienzi, Leonard J.	St. Paul
‡	Miller, Albert G.	St. Paul
	Miller, William T.	West St. Paul
	Miller, Zondal R.	St. Paul
‡	Milnar, Frank J.	St. Paul
	Milroy, Thomas W.	White Bear Lake
‡	Mishek, Charles J.	St. Paul
‡	Mitchell, George S.	St. Paul
†‡	Moga, John A.	St. Paul
	Molander, Herbert A.	St. Paul
	Moller, Jurgen	St. Paul
‡	Monahan, Robert H.	St. Paul
‡	Mooney, Robert D.	St. Paul
†	Moquin, Marie A.	St. Paul
†	Moren, J. Adelaide	White Bear Lake
	Moriarty, M. Berenice	St. Paul
	Moriarty. Cecile R.	St. Paul
‡	Muller, A. Eugene	North St. Paul
	Mundahl, Harold R.	St. Paul
‡	Murphy, Jack T.	St. Paul
	Murray, Roger C.	St. Paul
‡	Nash, Leo A.	St. Paul
‡	Neher, Frederick J.	St. Paul
	Neibergs, Lidija I.	St. Paul
	Neibergs, Pauls	St. Paul
‡	Nelson, Loren E.	St. Paul
†	Nelson, Louis A.	St. Paul
‡	Nelson, Louis A., Jr.	St. Paul
#	Nielsen, Andrew A.	A.P.O., New York
‡	Nimlos, Kenneth O.	St. Paul
†	Nimlos, Lenore O.	St. Paul
	Noble, John F.	St. Paul
‡	Noble, J. Lawrence	St. Paul
‡	Norman, David D.	St. Paul
	Nuebel, Charles J.	Sioux Falls, S. Dakota
	Nye, Katherine A.	St. Paul
	Nye, Lillian L.	St. Paul
‡	O'Brien, J. C.	St. Paul
	O'Kane, Thomas W.	St. Paul
‡	O'Malley, Valentine	St. Paul
†	O'Reilley, Bernard E.	St. Paul
‡	Ockuly, Orville E.	St. Paul
†	Ogden, Warner	St. Paul
†	Ohage, Justus	St. Paul
‡	Olsen, Ralph L.	St. Paul
‡	Ostergren, Edward W.	St. Paul
‡	Ouellette, Alfred J.	St. Paul
‡	Owens, Frederick M., Jr.	St. Paul
‡	Palm, Neil M.	St. Paul
	Paulson, Elmer C.	St. Paul
‡	Paulson, Wallace J.	St. Paul
	Pearson, Fritz R.	St. Paul
‡	Pearson, Malcolm M.	St. Paul
‡	Peck, Willard R.	St. Paul
	Pedersen, Arthur H.	St. Paul
	Peterson, David B.	St. Paul
‡	Peterson, Donald H.	St. Paul
‡	Peterson, Edward A.	St. Paul
‡	Peterson, Harold O.	St. Paul
	Peterson, Joel L. E.	St. Paul
‡	Peterson, John A.	St. Paul
	Peterson, Roy L.	White Bear Lake
	Phillips, Leonard	St. Paul
‡	Plotke, Harry L.	St. Paul
	Polski, Paul G.	South St. Paul
‡	Post, Edmund A.	St. Paul
‡	Prentice, Walter B.	St. Paul
‡	Proud, Harry S.	St. Paul
	Quattlebaum, Frank W.	St. Paul
‡	Raaen, Olaf J.	St. Paul
	Rabcevich, Anatole	St. Paul
‡	Ralph, James R.	St. Paul
	Ramlow, Ralph M.	St. Paul
†	Ramras, Donald G.	St. Paul
†	Ramsey, Walter R.	St. Paul
	Rasmussen, Ramby C.	St. Paul
‡	Raths, Otto N., Jr.	St. Paul
‡	Ravits, Harold G.	St. Paul
‡	Rea, Charles E.	St. Paul
‡	Reid, James W.	South St. Paul
	Reif, Robert W.	White Bear Lake
	Reitmann, John H.	Hastings
	Richards, Albert M.	St. Paul
	Richards, Ernest T. F.	St. Paul
‡	Richardson, Edward J., Jr.	St. Paul
‡	Rick, Paul F. W.	St. Paul

Rinkey, Eugene.........St. Paul
Ripple, Rudolph J.........St. Paul
‡ Ritchie, Wallace P.........St. Paul
‡ Ritt, Albert E.........St. Paul
‡ Roach, Donald E.........St. Paul
‡ Robbins, Mason C.........St. Paul
Rolig, David H.........St. Paul
‡ Rollie, Orris O.........St. Paul
‡ Rosenthal, Robert.........St. Paul
Rossing, Robert G.........St. Paul
‡ Roth, George C.........St. Paul
†‡ Rothschild, Harold J.........St. Paul
‡ Rowe, Clarence J., Jr.........St. Paul
‡ Roy, Philemon C.........St. Paul
† Ruhberg, George N.......Santa Barbara, Calif.
‡ Rukavina, John G.........St. Paul
‡ Rushay, Arthur J.........White Bear Lake
‡ Rusterholz, Alan P.........St. Paul
†‡ Ryan, John J.........St. Paul
‡ Ryan, Joseph M.........St. Paul
‡ Sarnecki, M. M.........St. Paul
† Satterlund, Victor L.....New Richmond, Wisc.
Schloff, Ivan.........St. Paul
‡ Schmidtke, Reinhardt L.........St. Paul
† Schoch, Robert B. J.........St. Paul
‡ Schons, Edward.........St. Paul
‡ Schroeckenstein, Hugo F.........St. Paul
†‡ Schuldt, Frederick C.........St. Paul
† Schulze, Albert G.........St. Paul
‡ Schwyzer, Hanns C.........St. Paul
Schwyzer, Marguerite.........St. Paul
‡ Scott, Eugene E.........St. Paul
Sekhon, Mohan S.........St. Paul
‡ Sells, Richard J.........St. Paul
Setzer, Hobert J.........St. Paul
Shannon, William R.........St. Paul
‡ Shelander, Marcus I.........St. Paul
† Shellman, John J.....Pacific Palisades, Calif.
Siegel, Clarence.........St. Paul
‡ Simons, Leander T.........St. Paul
Singer, Benjamin J.........St. Paul
‡ Skinner, Abbott.........St. Paul
† Skinner, Harvey O.........St. Paul
† Skworcow, George.........Minneapolis

Smiley, Donald P.........St. Paul
‡ Smisek, Elmer A.........St. Paul
‡ Smith, Vernon D. E.........St. Paul
‡ Snyder, George William.........St. Paul
‡ Sohlberg, Olof I.........St. Paul
‡ Sommerdorf, Vernon L.........St. Paul
‡ Sommers, Ben.........St. Paul
‡ Sorem, Milton B.........St. Paul
Soucheray, Philip H.........St. Paul
‡ Souster, Benjamin B.........St. Paul
‡ Sowada, Ernest J.........St. Paul
‡ Sperl, Michael P., Jr.........St. Paul
Sprafka, Gregory.........St. Paul
‡ Sprafka, Joseph L.........St. Paul
‡ Steinberg, Charles L.........St. Paul
‡ Sterner, Donald C.........St. Paul
‡ Sterner, Ernest R.........St. Paul
‡ Sterner, John J.........St. Paul
‡ Stolpestad, Armer H.........St. Paul
‡ Strand, Jack W.........St. Paul
‡ Strate, Gordon E.........St. Paul
Straus, Maurice L.........St. Paul
‡ Strem, Edward L.........St. Paul
Strickland, Martha J. B.........St. Paul
‡ Sturley, Rodney F.........St. Paul
Sullivan, William A., Jr.........Minneapolis
† Swanson, John A.........St. Paul
‡ Swanson, Lawrence J.........St. Paul
Swanson, Ralph H.........St. Paul
Swendson, James J.........St. Paul
Swenson, Donald B.........St. Paul
‡ Tani, George.........St. Paul
‡ Teisberg, John E.........St. Paul
Thompson, Floyd A.........St. Paul
Thoreson, M. C. Bernice.........South St. Paul
‡ Tiffany, Francis B.........St. Paul
‡ Tifft, Cyril R.........St. Paul
‡ Tongen, Lyle A.........St. Paul
‡ Travis, James S.........St. Paul
‡ Tregilgas, Harold R.........South St. Paul
Tregilgas, Richard B.........St. Paul
Tveten, Omar.........St. Paul
‡ Ubel, Frank A.........St. Paul
‡ Vail, David J.........St. Paul

Van Bergen, Frederick H.........Minneapolis
Varco, Richard L.........St. Paul
‡ Vaughn, C. Gordon.........St. Paul
Veirs, Dean M.........St. Paul
Veirs, Ruby J. S.........St. Paul
†‡ Venables, Alexander E.........Biwabik
‡ Votel, Thomas W.........St. Paul
‡ Waas Charles W.........St. Paul
‡ Walker, Arthur E.........St. Paul
‡ Wall, James O.........St. Paul
‡ Wallinga, Jack V.........St. Paul
‡ Walsh, Edward F.........St. Paul
‡ Walter, Clarence W.........St. Paul
Warren, Cecil A.........St. Paul
‡ Watson, P. Theodore.........St. Paul
‡ Watson, William H. A.........St. Paul
‡ Watson, William J.........Newport
Watz, Clarence E.........St. Paul
‡ Webber, Fred L.........St. Paul
‡ Wedes, Deno J.........St. Paul
‡ Weis, Benjamin A.........St. Paul
‡ Weisberg, Maurice.........St. Paul
‡ Wenzel, Gilbert P.........St. Paul
‡ Westover, Darrell E.........St. Paul
Wetteland, Thomas F.........West St. Paul
‡ Wetzel, Earl V.........St. Paul
‡ Wier, G. Thomas.........St. Paul
† Williams, Arthur B.........St. Paul
‡ Williams, Clayton K.........St. Paul
‡ Williams, George E.........St. Paul
Williams, Hugh J.........St. Paul
‡ Williams, John A.........St. Paul
Williams, Richard A.........St. Paul Park
Wilson, Fred B.........St. Paul
‡ Wilson, J. Allen.........St. Paul
‡ Wilson, James V.........St. Paul
† Winnick, Joseph B.........St. Paul
‡ Witthaus, Melvyn E.........St. Paul
† Wold, Sidney R.........St. Paul
‡ Wolkoff, H. J.........St. Paul
Word, Harlan L.........St. Paul
Youngren, Everett R.........St. Paul
‡ Zachman, Leo L.........St. Paul
Zagaria, James F.........St. Paul

RANGE MEDICAL SOCIETY

Koochiching, Itasca and northern portion of St. Louis County
Regular meetings, 4th Tuesday of the month
Annual meeting, January
Number of members—123

President
Ciriacy, Edward W.........Ely
Secretary
Paciotti, Vincent J.........Hibbing
Corresponding Secretary
Workman, Mrs. Rae.........Hibbing
†‡ Adams, Bertram S.........Hibbing
Addy, Edward R.........Gilbert
‡ Ahola, Kenneth E.........Hibbing
‡ Anderson, Richard W.........Aurora
‡ Antonow, Arthur M.........Virginia
Baich, Velemir M.........Coleraine
‡ Barnes, Richard E.........Aurora
† Barry, George J.........Minneapolis
Benell, Otto E.........Virginia
† Binet, Henry E.........Grand Rapids
‡ Blackmore, Sidney C.........Biwabik
Bolz, J. Arnold.........Grand Rapids
†‡ Bonner, John L.........St. Paul
Bowen, Robert L.........Hibbing
‡ Braun, Ohrmundt C.........Grand Rapids
‡ Brockway, Roger W.........Grand Rapids
Brooks, Leonard J.........Virginia
‡ Bryant, Emmett P.........Chisholm
Bullock, Leon J.........Virginia
† Callan, Joseph A.........Virginia
† Cantwell, William F.........International Falls
‡ Chermak, Francis G.........International Falls
‡ Ciriacy, Edward W.........Ely
Cope, Hershel B.........Virginia
Coy, Douglas J.........Grand Rapids
Crow, George M.........International Falls
Davies, Donald W.........Eveleth
DeMarais, Lloyd C.........Hibbing
Dobler, Manfred G.........Ely
‡ Eisenman, Walter.........Hibbing
Engelstad, Wendell P.........Virginia
*‡ Erickson, George P.........Hibbing
‡ Erickson, Vernon D.........Grand Rapids
Erlanson, A. Cornell.........Hibbing
‡ Evensta, John B.........Grand Rapids
Ewens, George B.........Virginia
Ferrell, Clarence R.........Grand Rapids
Flanary, Lawrence M.........Chisholm

‡ Flynn, Bernard F.........Hibbing
‡ French, Bayard T.........Hibbing
Friedlieb, Oskar P.........Virginia
Gerend, Thomas J.........Virginia
‡ Goodman, Charles E.........Virginia
†‡ Graham, Archibald W.........Chisholm
Grahek, Jack P.........Ely
Grinley, Andrew V.........Grand Rapids
‡ Halper, Bernard.........Hibbing
† Halverson, Kermit J.........Minneapolis
‡ Hanover, Ralph D.........International Falls
‡ Hansen, Robert E.........Hibbing
Heiam, William C.........Cook
‡ Ireland, Gerald W.........Grand Rapids
Jacobson, Clarence.........Chisholm
‡ Joffe, Harold H.........Virginia
‡ Johnson, Calvin J.........Grand Rapids
‡ Johnsrud, Luverne W.........Hibbing
Johnston, H. Wayne.........Virginia
* Jolin, Francis M.........Grand Rapids
‡ Karges, Laurel E.........Grand Rapids
‡ Karish, Louis J.........Coleraine
‡ Kelly, Robert T.........Grand Rapids
Kiestar, Frank, Jr.........Grand Rapids
† Knutson, Kenneth R.........Minneapolis
‡ Kotchevar, Frank R.........Eveleth
‡ Kruger, Elmer L.........Nashwauk
† Kundel, Robert Ray.........Minneapolis
Law, Harrison E.........Virginia
Lynn, Robert J.........Bigfork
McGill, Leon K.........Virginia
McKenna, John J.........Virginia
‡ McKenna, Maurice J.........Grand Rapids
MacDonald, Roger A.........Littlefork
‡ Malmstrom, John A.........Virginia
Martinson, Raymond M.........Eveleth
‡ Mast, Fredric L.........Chisholm
‡ Miettunen, John B.........Hibbing
Mock, Charles J.........Virginia
Mollers, Theodore P.........Soudan
† Morsman, L. William.........Hibbing
Moyer, Richard R.........Hibbing
‡ Muller, John J.........Hibbing

‡ Murray, Robert A.........Hibbing
Nakamura, James Y.........Deer River
‡ Neff, Walter S.........Virginia
Nelimark, Donald R.........Virginia
‡ Nollet, Donald J.........Hibbing
Owens, Ben P.........Hibbing
‡ Paciotti, Vincent J.........Hibbing
‡ Parker, Wilbert H.........Chisholm
Payne, Richard E.........Virginia
† Pearsall, Robert P.........Virginia
Peterson, Edward N.........Virginia
Petrick, Thomas G.........Virginia
Pierce, Jack R.........Williamson, W. Va.
Prlina, Isaac M.........Virginia
‡ Raattama, John W.........Nashwauk
‡ Rajala, Arnold I.........Grand Rapids
Reed, Paul.........Virginia
‡ Richter, David J.........Virginia
‡ Rowles, Everett K.........Coleraine
‡ Salter, Reginald A.........Virginia
‡ Schirber, Martin J.........Grand Rapids
‡ Schweiger, Theodore R.........Hibbing
Sekanina, Jan.........Babbitt
Sher, David A.........Virginia
‡ Siegel, John S.........Virginia
‡ Sinamark, Andrew.........Hibbing
Sisler, Clifford E.........Minneapolis
Snyker, Omer E.........Ely
Stewart, Gordon T.........Babbitt
‡ Stolen, Keith H.........Grand Rapids
† Strathern, Moses L.........Gilbert
† Student, Richard E.........Minneapolis
Summar, M. Thomas.........Virginia
Swenson, Floyd J.........Cook
† Swenson, Richard W.........Minneapolis
‡ Thouin, Laurence G.........Hibbing
† Tomhave, Wesley G.........Chicago, Ill.
‡ Walter, Frederick H.........International Falls
‡ Weir, Matthew J.........Virginia
Werner, Donald L.........Aurora
‡ Wilbur, Oscar M., Jr.........Hibbing
‡ Will, Charles B.........International Falls
Woodruff, Whitney.........Virginia

RED RIVER VALLEY MEDICAL SOCIETY

Kittson, Mahnomen, Marshall, Norman, Pennington, Polk, Red Lake and Roseau Counties
Regular meetings, quarterly
Annual meeting in December
Number of members—57

President
Greene, Daniel E. .... Thief River Falls
Secretary
Sather, Russell O. .... Crookston
Anderson, Roland G. .... Thief River Falls
‡ Anderson, Wallace E. .... Clearbrook
‡ Behr, Orlo K. .... Crookston
‡ Berg, Arnold M. .... Roseau
‡ Boroson, Hugh N. .... Thief River Falls
† Bratrud, Edward .... Thief River Falls
Brink, Adlai A. .... Baudette
‡ Brown, Glenn W. .... Halstad
‡ Cameron, John H. .... Crookston
‡ Clapp, Hubert D. .... Crookston
Collins, Roger T. .... Roseau
‡ Covey, Kenneth W. .... Crookston
‡ Dale, Les N. .... Red Lake Falls
‡ Delmore, John L., Jr. .... Roseau
‡ Edwards, Robert V. .... Crookston
‡ Flancher, Leon H. .... Crookston
‡ Foderick, Peter P. .... Hallock
‡ Fortman, Albert H., Jr. .... Crookston
‡ Greene, Daniel E. .... Thief River Falls
‡ Hendrickson, John M. .... Red Lake Falls
‡ Herber, Leo .... Thief River Falls
‡ Hirsch, Stanton A. .... Crookston
‡ Holmstrom, Carle H. .... Warren
Janecky, Allen G. .... Baudette
‡ Jensen, John A. .... Crookston
‡ Kinkade, Byron R. .... Ada
‡ Klefstad, Lloyd H. .... Greenbush
‡ Kostick, William R. .... Fertile
‡ Loken, Theodore .... Ada
† Lynde, Orrin G. .... Los Gatos, Calif.
‡ Martin, George B. .... Thief River Falls
‡ Mercil, William F. .... Crookston
† Mueller, Donald R. .... Bloomington
† Nelson, Henry E. .... Crookston
‡ Oppegaard, Chester L. .... Crookston
‡ Pansegrau, Duane F. .... Karlstad
‡ Pollman, Stanley E. .... Thief River Falls
‡ Pumala, Erven E. .... Warren
‡ Reff, Alan R. .... Crookston
‡ Roholt, Christian L. .... McIntosh
‡ Roholt, Hartvig B. .... Fosston
Sather, Edgar L. .... Fosston
‡ Sather, George A. .... Fosston
‡ Sather, Richard N. .... Fosston
‡ Sather, Russell O. .... Crookston
‡ Scheuneman, Allen F. .... Warroad
‡ Schnabel, Robert F. .... Crookston
‡ Skogerboe, Rudolph B. .... Karlstad
‡ Stadem, Clifford J. .... Twin Valley
Starekow, Milton D. .... Thief River Falls
‡ Stewart, Donald E. .... Crookston
‡ Thorsgard, Ernest O. .... Thief River Falls
‡ Thysell, Harold R. .... Crookston
‡ Uhley, Charles G. .... Crookston
Van Rooy, George T. .... Thief River Falls
‡ Wendt, H. Paul .... Thief River Falls
‡ Wikoff, Howard M. .... Crookston

RENVILLE-REDWOOD COUNTY MEDICAL SOCIETY

Renville and Redwood Counties
Regular meetings, 3rd Tuesday of each month
Annual meeting, December
Number of members—21

President
Flinn, James B. .... Redwood Falls
Secretary
Bingham, George C. .... Bird Island
Alcorn, William J. .... Wabasso
‡ Anderson, Chester A. .... Hector
‡ Bingham, George C. .... Bird Island
† Brand, William A. .... Redwood Falls
‡ Ceplecha, Stanley F. .... Redwood Falls
‡ Cosgriff, James A. .... Olivia
Cosgriff, James A., Jr. .... Olivia
‡ Diessner, Ardell W. .... Redwood Falls
‡ Dordal, John .... Sacred Heart
‡ Fawcett, Arthur M. .... Renville
‡ Flinn, James B. .... Redwood Falls
† Flinn, Thomas E. .... Remer
‡ Furr, Leo O. .... Bird Island
‡ Inglis, William .... Redwood Falls
‡ Johnson, William E. .... Morgan
‡ Lenz, Joseph R. .... Morton
Metz, Donald D. .... Minneapolis
‡ Nelson, Glenn E. .... Fairfax
‡ Pierce, Robert E. .... Renville
† Preisinger, Joseph W. .... Dallas, Texas
‡ Rud, James A. .... Buffalo Lake
‡ Strauchler, Jonas .... Belview

RICE COUNTY MEDICAL SOCIETY

Rice County
Regular meetings, 3rd Tuesday of each month
Annual meeting in December
Number of members—34

President
Meyer, Robert P. .... Faribault
Secretary
Good, Roy H. .... Northfield
‡ Beaton, J. Gordon .... Northfield
‡ Bruhl, Heinz H. .... Faribault
Buesgens, Ralph H. .... Waterville
‡ Engberg, Edward J. .... Faribault
Francis, David W. .... Morristown
‡ Furlow, William L. .... Faribault
‡ Good, Roy H. .... Northfield
Graham, Asa B. .... Faribault
‡ Haas, Jack F. .... Northfield
‡ Hanson, John W. .... Northfield
‡ Halvorson, David .... Northfield
† Huxley, Frederick R. .... Faribault
Kennedy, George L. .... Faribault
‡ Kolars, James J. .... Faribault
Lende, Norman .... Faribault
Meyer, Frederick C. .... Kenyon
Meyer, Paul F. .... Faribault
Meyer, Robert P. .... Faribault
Moses, Royal R. .... Kenyon
Nelson, Ernest J. .... Lonsdale
‡ Nuetzman, Arthur W. .... Faribault
‡ Orr, Burton A. .... Faribault
Ozolins, Marta .... Faribault
Petersen, Donald H. .... Northfield
*†‡ Robilliard, Charles M. .... Faribault
Rumpf, Carl W. .... Faribault
‡ Rysgaard, George N. .... Northfield
‡ Smith, Thorsten .... Faribault
‡ Speckhals, Robert C. .... Faribault
‡ Street, Bernard .... Northfield
Studer, Donald J. .... Faribault
† Traeger, Carl A. .... Faribault
‡ Weaver, Paul H. .... Faribault
†‡ Wilson, Warren E. .... Northfield

ST. LOUIS COUNTY MEDICAL SOCIETY

Carlton, Cook, Lake and southern portion of St. Louis County
Regular meetings, 2nd Thursday except July and August
Annual meeting, 2nd Thursday in January
Number of members—191

President
Bray, Philip N. .... Duluth
Secretary
Linke, Charles A. .... Duluth
Secretary, Executive Office
Lundgren, Miss Margaret M. .... Duluth
‡ Abraham, Arden L. .... Duluth
‡ Ahrens, Curtis F. .... Duluth
‡ Asta, Joseph J. .... Duluth
† Athens, Alvin G. .... Duluth
‡ Atmore, William G. .... Duluth
‡ Aufderheide, Arthur C. .... Duluth
‡ Backus, Byron C. .... Cloquet
‡ Backus, Lloyd B. .... Cloquet
‡ Backus, Reno W. .... Nopeming
‡ Bagley, Charles M. .... Duluth
Bagley, Elizabeth C. .... Duluth
†‡ Bagley, William R. .... Duluth
‡ Bakkila, Henry E. .... Duluth
‡ Balmer, Albert I. .... Duluth
‡ Bardon, Richard .... Duluth
Barker, John D. .... Duluth
† Barney, Leon A. .... Duluth
‡ Barrett, Earl E. .... Duluth
‡ Bartzen, Peter J. .... Duluth
‡ Becker, Frederick T. .... Duluth
‡ Bell, Harry M., Jr. .... Duluth
Bepko, Maria K. (Mrs. Puumala) .... Cloquet
Berdez, George L. .... Duluth
‡ Bergan, Robert O. .... Duluth

‡	Bianco, Anthony J.	Duluth
‡	Bloom, Joseph	Silver Bay
	Boecker, Bernhard	Duluth
	Boman, Paul G.	Duluth
‡	Boyer, Samuel H., Jr.	Duluth
‡	Bray, Philip N.	Duluth
†	Brooker, Warren J.	Minneapolis
	Brown, Cyrus C., Jr.	Duluth
‡	Buckley, Robert P.	Duluth
‡	Butler, John K.	Cloquet
	Campaigne, Robert J.	Duluth
‡	Christensen, Clarence H.	Duluth
†	Chrzan, Donald J.	Iowa City, Iowa
	Clark, Elizabeth A. (Mrs. Halbert)	Duluth
‡	Clark, Ivan T.	Duluth
‡	Coll, James J	Duluth
†	Collins, Arthur N.	Duluth
‡	Conley, Francis W.	Duluth
‡	Cooper, Harold G.	Duluth
‡	Coventry, William D.	Duluth
‡	Cowan, George M.	Duluth
‡	Crook, Rudolph L.	Duluth
	Davis, William I.	Moose Lake
	Deutsch, Robert J.	Duluth
‡	Dickson, Franklin H., Jr.	Proctor
‡	Dwyer, John J.	Duluth
‡	Eckman, Philip F.	Duluth
‡	Eckman, Ralph J.	Duluth
†	Ekblad, John W.	Rock Island, Illinois
‡	Eklund, Carl D.	Duluth
‡	Elias, Frank J.	Duluth
‡	Emanuel, Karl W.	Duluth
	Eppard, Raymond M.	Cloquet
‡	Fawcett, Keith R.	Duluth
‡	Fellows, Manley F.	Duluth
	Ferrand, Paula T.	Moose Lake
‡	Feuling, John C.	Duluth
‡	Fifield, Malcolm M.	Duluth
‡	Fischer, Mario M.	Duluth
‡	Fisketti, Henry	Duluth
‡	Fuller, Josiah	Duluth
‡	Gillespie, Malcolm G.	Duluth
	Gobel, Fredarick L.	Duluth
‡	Goldish, Daniel R.	Duluth
‡	Goldish, Robert J.	Duluth
‡	Goldschmidt, Volker	Duluth
‡	Goodnow, William H.	Duluth
‡	Gowan, Lawrence R.	Duluth
‡	Granquist, Richard D.	Duluth
‡	Grohs, William H.	Duluth
‡	Gronquist, Y. K. J.	Duluth
‡	Haase, Donald D.	Silver Bay
‡	Haavik, John E.	Duluth
	Halbert, John J.	Duluth
*†	Haney, Claude L.	Duluth
‡	Hanson, Ernest O.	Cloquet
‡	Harrington, Vernon A., Jr.	Duluth
†‡	Hatch, Walter E.	Duluth
‡	Hilding, Anderson C.	Duluth
‡	Hilgedick, William R.	Two Harbors
†	Hill, Frederick E.	Riverside, Calif.
†	Hirschboeck, Frank J.	Duluth
‡	Hoeg, Dwight C.	Duluth
‡	Hoff, Herbert O.	Duluth
‡	Houkom, Samuel S.	Duluth
	Hutchinson, Henry	Moose Lake
‡	Jacobson, Ferdinand C.	Duluth
†	Jensen, Thorvold J.	Duluth
‡	Jeronimus, Henry J.	Duluth
	Jessico, Charles M.	Duluth
#	John, Robert H.	St. Paul
‡	Johnson, Karl E.	Duluth
‡	Jorgenson, Edward O.	Duluth
‡	Juntenen, Ray R.	Duluth
†‡	Klein, Harry	Duluth
‡	Klein, William A.	Duluth
‡	Knapp, Frank N.	Duluth
‡	Knoedler, John P.	Duluth
	Kohlbry, Carl O.	Duluth
	Kosiak, William	Two Harbors
	Kozberg, Oscar	Moose Lake
‡	Krueger, Victor R.	Nopeming
	L'Abbe, A. J. Philip	Duluth
	L'Esperance, Bernard F.	Duluth
‡	LaBree, Robert H.	Duluth
†‡	Laird, Arthur T.	Duluth
‡	Langseth, Rodney N.	Duluth
	Larson, Keith D.	Moose Lake
‡	Latterell, Kenneth E.	Duluth
‡	Leek, Joseph H.	Duluth
†	Lepak, Francis J.	Duluth
	Leppo, N. Erkki A.	Duluth
	Linke,Charles A.	Duluth
	Linke, Clara L.	Duluth
‡	Litman, Samuel N.	Duluth
†	McDonald, Archibald L.	Duluth
‡	McHaffie, Orval L.	Duluth
‡	McNutt, John R.	Duluth
‡	MacRae, Gordon C.	Duluth
‡	Magney, Fredolph H.	Duluth
	Martin, Webster C.	Duluth
‡	Martin, William B.	Duluth
	Mayne, Roy M.	Nopeming
†	Mead, Charles H.	Duluth
	Moe, Thomas	Moose Lake
‡	Monserud, Nels O.	Cloquet
‡	Moyer, John B.	Duluth
‡	Munger, James E.	Duluth
	Munson, Martin S.	Barnum
†‡	Nicholson, Murdoch A.	Duluth
‡	Nisius, George F.	Duluth
‡	Norberg, Carl E.	Cloquet
‡	Nutting, Roland E.	Duluth
‡	O'Neill, John C.	Duluth
‡	Olson, Albert E.	Duluth
‡	Olson, Archie O.	Duluth
‡	Papermaster, Ralph	Two Harbors
‡	Parson, E. Irvine	Duluth
‡	Pasek, Antone W.	Cloquet
‡	Patch, Orien B.	Duluth
‡	Pedersen, Roy C.	Duluth
*†	Pennie, Daniel F.	Duluth
‡	Peterson, John H.	Duluth
‡	Pollard, William S.	Duluth
‡	Power, John E.	Duluth
‡	Power, John E., Jr.	Duluth
	Puumala, Barbara M.	Cloquet
	Puumala, Reino H.	Cloquet
	Puumala, Ricard R.	Cloquet
‡	Reardon, Andrew E.	Duluth
	Reed, Henry H.	Duluth
†	Rowe, Olin W.	Duluth
‡	Rudie, Peter S.	Duluth
‡	Rudie, William D.	Duluth
‡	Runquist, John M.	Duluth
	Ruth, Bradley R.	Duluth
*	Ryan, William J.	Duluth
‡	Sach-Rowitz, Alvan	Moose Lake
	Sanford, John B.	Duluth
†	Sarff, Oliver E.	Duluth
	Sax, Milton H.	Duluth
	Sax, Simon G.	Duluth
‡	Schmid, John F.	Duluth
‡	Schneider, Lawrence E.	Duluth
†	Schroder, Charles H.	Pottstown, Penn.
‡	Seashore, Rosel T.	Duluth
‡	Smith, Cyril M.	Duluth
	Smith, Wallace R.	Grand Marais
	Spang, Anthony J.	Duluth
	Spang, James S.	Duluth
	Spang, William M.	Duluth
‡	Stein, William A.	Duluth
‡	Storsteen, Kenneth A.	Duluth
‡	Streitz, John M.	Duluth
‡	Strewler, Gordon J.	Duluth
‡	Swedberg, William A.	Duluth
‡	Swenson, Arnold O.	Duluth
‡	Teich, Kenneth W.	Duluth
‡	Terrell, Bernard J.	Nopeming
‡	Tetlie, James P.	Duluth
‡	Thomas, John V.	Duluth
‡	Thurn, Roy J.	Duluth
‡	Tosseland, Noel E.	Duluth
‡	Trautmann, James C.	Duluth
†	Tuohy, Edward L.	Santa Barbara, Calif.
‡	Tuura, James L.	Duluth
‡	Van Puffelen, Paul S.	Duluth
	Van Ryzin, Donald J.	Duluth
‡	Walder, Harold J.	Duluth
‡	Wallace, Martin O.	Duluth
‡	Wells, Arthur H.	Duluth
†	Wheeler, Daniel W.	Fort Lauderdale, Fla.
‡	Williams, Bruce F. P.	Duluth
†	Winter, John A.	Duluth
‡	Wolff, John M.	Duluth
‡	Young, Thomas O.	Duluth
‡	Zemmers, Roberts	Duluth

SCOTT-CARVER COUNTY MEDICAL SOCIETY

Scott and Carver Counties

Regular meetings, 2th Thursday of all months except July and August

Annual meeting in June

Number of members—37

	President	
	Heinzerling, Carl R.	Chaska
	Secretary	
	Doherty, Elmer M.	New Prague
‡	Adams, Patrick J.	Chaska
‡	Bean, Charles N.	Waconia
‡	Bratholdt, James W.	Watertown
†	Buck, Frederick H.	Shakopee
‡	Cervenka, Charles F.	New Prague
‡	Clarke, John W.	Waconia
‡	Doherty, Elmer M.	New Prague
	Gildersleeve, Robert	Watertown
	Goldstein, Alan	Chanhassen
‡	Hallgren, Roger B.	Belle Plaine
†‡	Hebeisen, Milton B.	Carver
	Heinz, Ivy B.	Shakopee
‡	Heinzerling, Carl R.	Chaska
‡	Juergens, Herman M.	Belle Plaine
	Kaiser, Bernard D.	Belle Plaine
	Kucera, Stanley T.	Northfield
	Kuz, Eugene	Savage
‡	Larson, Leighton W.	Waconia
‡	Lehrer, Alfred J., Jr.	Montgomery
‡	Lukk, Olaf	Prior Lake
*†	Martin, Thomas Philip	Minneapolis
	Nagel, Harold D.	Minneapolis
	Nelson, Gerald E.	Chaska
	Ninneman, Newton N.	St. Peter
†	Novak, Edward E.	New Prague
‡	Pearson, Bror F.	Shakopee
‡	Philp, David R.	Watertown
‡	Ponterio, James E.	Shakopee
	Rieschl, Elizabeth K.	Jordan
‡	Rynda, Edwin R.	New Prague
‡	Sawaryniuk, Iwan	Waconia
‡	Schimelpfenig, George T.	Chaska
	Simmonds, Harry N.	Prior Lake
‡	Simons, Bernard H.	Chaska
	Stahler, Paul A.	Jordan
‡	Strait, Herbert	Waconia
†‡	Westerman, Alvin	Montgomery
†‡	Westerman, Fred C.	Montgomery

SOUTHWESTERN MINNESOTA MEDICAL SOCIETY

Cottonwood, Jackson, Murray, Nobles, Pipestone and Rock Counties

Regular meetings spring and fall

Anual meeting, October-November

Number of members—52

	President	
	Kotval, Russell J.	Pipestone
	Secretary	
	Heiberg, O. M	Worthington
‡	Bader, J. L.	Slayton
	Basinger, Harold P.	Windom
‡	Basinger, Homer P.	Windom
‡	Beckering, Gerrit	Edgerton
‡	Beniamin, Walter G.	Pipestone
‡	Bofenkamp, Ferdinand W.	Luverne
‡	Boone, Ervin S.	Luverne
	Boyd, Frank E.	Jasper

Buresh, Kenneth L.......Westbrook
‡ Carlson, John V.......Westbrook
Carlson, Lloyd E.......Worthington
‡ Christiansen, Harold A.......Jackson
‡ Dawson, Lorin D.......Worthington
Dokken, James H.......Windom
Doman, Victor W.......Lakefield
Hallin, Roger P.......Worthington
‡ Halloran, Walter H.......Jackson
‡ Halpern, David J.......Brewster
Halvorson, Harold C.......Luverne
‡ Harrison, Percy W.......Worthington
‡ Heiberg, Olaf M.......Worthington
‡ Hoyer, Ludolf J.......Windom
Karleen, Bernard N.......Jackson
‡ Keyes, Robert W.......Pipestone
‡ Kilbride, Edwin A.......Worthington
‡ Kotval, Russell J.......Pipestone
Kuss, Gerald W.......Heron Lake
‡ Laikola, Leslie A.......Adrian
‡ Lohmann, John G.......Pipestone
‡ Maitland, Edwin T.......Jackson
*† Manson, Frank M.......Worthington
‡ Martin, Albert C.......Luverne
‡ Minge, Raymond K.......Worthington
‡ Mochal, Milo A.......Worthington
‡ Nealy, Donald E.......Adrian
Nywall, Dean D.......Slayton
‡ Odland, Donald M.......Luverne
‡ Patterson, Hugh D.......Slayton
‡ Pierson, Roy F.......Slayton
†‡ Piper, William A.......Mountain Lake
‡ Plucker, Milton W.......Worthington
‡ Rose, John T.......Lakefield
Ryding, Vincent.......Mountain Lake
‡ Sawtell, Robert R.......Worthington
‡ Schade, Frederick L.......Worthington
‡ Schutz, Elmer S.......Mountain Lake
†‡ Sherman, Charles L.......Luverne
‡ Stam, John.......Worthington
‡ Stratte, Harold C.......Windom
Sundberg, Arthur B.......Heron Lake
‡ Vix, Vernon A.......Worthington
‡ Wells, Walter B.......Jackson
† Williams, Charles A.......Seattle, Wash.

STEARNS-BENTON COUNTY MEDICAL SOCIETY

Stearns and Benton Counties
Regular meetings, third Thursday of month
Annual meeting, December
Number of members —70

President
Schmitz, Everett J.......St. Cloud
Secretary
Murn, Thomas G.......St. Cloud
‡ Alden, W. Charles.......Kimball
Aulick, Ernest J.......Paynesville
‡ Autrey, William A.......St. Cloud
‡ Baumgartner, Florian H.......Albany
‡ Beuning, John B.......St. Cloud
‡ Bozanich, Milosh S.......St. Cloud
‡ Brigham, Charles F., Jr.......St. Cloud
‡ Broker, Henry M.......St. Cloud
Clark, Harry B.......St. Cloud
‡ Cesnik, Robert J.......Sauk Rapids
‡ Davis, Arthur E., Jr.......St. Cloud
Davidson, William D.......St. Joseph
‡ Donaldson, Charles S.......St. Cloud
† DuBois, Julian F.......Sauk Centre
‡ Evans, Leslie M.......Sauk Rapids
‡ Gaida, Joseph B.......St. Cloud
‡ Goehrs, Gilman H.......St. Cloud
† Goehrs, Henry W.......St. Cloud
‡ Gorchynski, Orest.......Milaca
Grant, John C.......Sauk Centre
‡ Greenwald, Charles M.......St. Cloud
† Haberman, Emil.......Osakis
Halenbeck, Philip L.......St. Cloud
† Handler, Seymour.......Minneapolis
Henry, Clarence J.......Milaca
Henry, Joseph E.......Milaca
†‡ Jones, Richard N.......St. Cloud
Keith, Paul J.......Milaca
‡ Kelly, James H.......St. Cloud
‡ Kelly, John F.......Cold Spring
‡ Kline, Richard F.......St. Cloud
‡ Koenig, Robert P.......St. Cloud
Koop, Herman E.......Cold Spring
Kuhlmann, Lawrence B.......Melrose
‡ LaFond, Edward M.......St. Cloud
‡ Lenarz, Albert J.......St. Cloud
‡ Lindley, Stanley B.......St. Cloud
Lindeman, Raymond J.......Paynesville
‡ Loes, Louis A.......St. Cloud
†‡ McDowell, John P.......St. Cloud
McNamara, John.......St. Cloud
*† Meyer, Anthony A.......Minneapolis
‡ Milhaupt, Emmett N.......St. Cloud
Mueller, Rudolph B.......Richmond
‡ Murn, Thomas G.......St. Cloud
‡ Musachio, Nicholas F.......Foley
Myre, Clifford R.......Paynesville
‡ Neils, Vernon E.......Sauk Rapids
Nietfield, Aloys B.......Sauk Centre
‡ Olinger, John N.......St. Cloud
‡ Petersen, Robert T.......St. Cloud
‡ Phares, Otto C.......St. Cloud
‡ Raetz, Sylvester J.......Maple Lake
‡ Reif, Henry J.......St. Cloud
‡ Rice, William H.......St. Cloud
‡ Richards, William B.......St. Cloud
Salk, Richard J.......Albany
†‡ Sandven, Nels O.......Paynesville
Savelkoul, Gene R.......Belgrade
‡ Schmitz, Everett J.......St. Cloud
‡ Sisk, Harvey E.......St. Cloud
† Stangl, Philip E.......St. Cloud
‡ Stiles, Clifford D.......Foley
‡ Thuringer, Carl B.......St. Cloud
‡ Undem, Dale W.......St. Cloud
Vanderpool, Thomas E.......Paynesville
‡ Veranth, Leonard A.......St. Cloud
‡ Wenner, Waldemar T.......St. Cloud
‡ Wittrock, Louis H.......Watkins
Zachman, Albert H.......Melrose
Zachman, John F.......Melrose
‡ Zeleny, Joseph H.......St. Cloud

STEELE COUNTY MEDICAL SOCIETY

Steele County
Regular meetings, 3rd Tuesday of every other month
Annual meeting, January
Number of members—23

President
Dewey, Donald H.......Owatonna
Secretary
deWerd, Robert W.......Owatonna
‡ Anderson, Franklin C.......Owatonna
Arnesen, John F.......Owatonna
deWerd, Robert W.......Owatonna
‡ Dewey, Donald H.......Owatonna
Doebler, Myron I.......Bagley
‡ Fischer, John R.......Blooming Prairie
Floersch, Adrian J.......Owatonna
‡ Halvorsen, Daniel K.......Owatonna
Hartung, Elmer H.......Claremont
Heckman, Donald C.......Owatonna
‡ Henry, Kenneth G.......Owatonna
Honath, Donald H.......Owatonna
Kulstad, Oscar S.......Dodge Center
Lundquist, Curt W.......Owatonna
‡† McEnaney, Clifford T.......Owatonna
‡ McEnaney, James E.......Owatonna
McIntyre, John A.......Owatonna
‡ Miller, Robert C.......Owatonna
† Morehead, Dewey E.......Bodega Bay, Calif.
‡ Olson, Albert J.......Owatonna
Roberts, Oliver W.......Owatonna
‡ Schaefer, Joseph F.......Owatonna
Stransky, Theodore W.......Owatonna
† Wilkowske, Rudolph J.......Owatonna

UPPER MISSISSIPPI MEDICAL SOCIETY

Aitkin, Beltrami, Cass, Clearwater, Crow Wing, Hubbard,
Lake of the Woods, Morrison, Todd and Wadena Counties
Regular meeting, not set
Annual meeting, January
Number of members—93

President
Cardle, George E.......Brainerd
Secretary
Badeaux, George I.......Brainerd
‡ Adkins, James T.......Bertha
‡ Aga, John H.......Brainerd
‡ Anderson, Arden O.......Brainerd
Anderson, Werner W.......Brainerd
† Backer, Gordon R.......Rochester
‡ Badeaux, George I.......Brainerd
Belcher, Royden A.......Little Falls
Bender, James H.......Brainerd
Benson, Alfred H.......Little Falls
‡ Bissinger, Lester L.......Brainerd
‡ Bolstad, Owen C.......Little Falls
‡ Borgerson, Arthur H.......Long Prairie
‡ Brown, Russell T.......Browerville
Burman, Richard E.......Aitkin
Cardle, George E.......Brainerd
Closuit, Frederick C.......Aitkin
Cook, Jay M.......Staples
‡ Coombs, Carl H.......Cass Lake
† Craig, C. C.......International Falls
‡ Crow, Earl R.......Ah-Gwah-Ching
† Cushing, Robert L.......Walnut Creek, Calif.
Davis, Lloyd T.......Wadena
Davis, Luther F.......Wadena
Deweese, Wilford J.......Bemidji
‡ Dillenburg, C. J.......Little Falls
‡ Dodson, Albertus.......Brainerd
‡ Duthoy, E. J.......Park Rapids
‡ Erickson, Alvin O.......Long Prairie
‡ Fitzsimons, William E.......Brainerd

Fortier, George M. A. ... Little Falls
Franklin, Gordon W. ... Northome
† Ghostley, Mary C. ... Santa Ana, Calif.
Griffin, John W., Jr. ... Bemidji
Grimes, Paul T. ... Park Rapids
Groschupf, Richard P. ... Bemidji
Groschupf, Theophilus P. ... Bemidji
‡ Grose, Frederick N. ... Clarissa
Halme, William B. ... Wadena
Hansen, Milo L. ... Little Falls
Hartjen, Jason K. ... Bemidji
‡ Heid, James K. ... Little Falls
† Healy, Raymond T. ... Pierz
Hendricks, Esten J. ... Verndale
Hildebrand, John E. ... Bemidji
‡ Hughes, Bernard J. ... Brainerd
‡ Johnson, Douglas L. ... Little Falls
† Johnson, Einer W. ... Bemidji
‡ Kanne, Earl R. ... Brainerd
‡ Kelley, Roger E. ... Crosby
‡ Knoll, W. V. ... Brainerd
Larson, LeRoy J. ... Bagley

‡ Lee, Hubert W. ... Brainerd
‡ Lofstrom, Dennis E. ... Africa
Longfellow, Helen W. ... Brainerd
Lund, Werner J. ... Staples
Lundsten, Leslie C. ... Bemidji
‡ McLane, William O. ... Brainerd
Marshall, Clark M. ... Crosby
‡ Marvin, Joseph E. ... Brainerd
‡ Meller, Maurice ... Brainerd
Mortenson, Howard O. ... Menahga
‡ Mosby, Maurice E. ... Long Prairie
‡ Mulligan, Arthur M. ... Brainerd
Nixon, James B. ... Crosby
Nord, J. Erling ... Staples
Nordlund, Mildred E. ... Cass Lake
‡ O'Leary, John B. ... Brainerd
Olson, Lillian A. ... Ah-Gwah-Ching
Parker, Charles W. ... Wadena
Parker, Philip J. ... Staples
Parker, Warren E. ... Sebeka
‡ Pedersen, Robert L. ... Brainerd
‡ Pelzl, Charles R. ... Pine River

Petraborg, Harvey T. ... Aitkin
Pettersen, George R. ... Aitkin
‡ Poppie, R. W. ... Brainerd
* Pierce, Charles H. ... Wadena
Quanstrom, Virgil E. ... Brainerd
‡ Quast, John E. ... Long Prairie
‡ Reichelderfer, C. F. ... Staples
Reichelt, Leland G. ... Wadena
‡ Ringle, Otto F. ... Walker
† Sanderson, Anton G. ... Ashby
Schrantz, R. D. ... Park Rapids
Spieler, F. B. ... Pequot Lakes
‡ Stein, Raymond J. ... Pierz
‡ Stoy, Robert A. ... Little Falls
Ulrich, Emery E. ... Crosby
‡ Watson, Alexander M. ... Royalton
† Watson, Percy T. ... Miami, Fla.
Watson, Sidney W. ... Royalton
‡ Westley, Kent ... Little Falls
Whittemore, Dexter D. ... Bemidji
Will, William W. ... Bertha
‡ Williams, Mervyn M. ... Ah-Gwah-Ching

WABASHA COUNTY MEDICAL SOCIETY

Wabasha County
Regular meeting, special call
Annual meeting, 1st Monday in October
Number of members—13

President
Ekstrand, LeRoy M. ... Wabasha
Secretary
Mahle, Donald G. ... Plainview
‡ Bayley, E. Covell ... Lake City
‡ Bouquet, Bertram J. ... Wabasha

‡ Bowers, Robert N. ... Lake City
* Collins, Joseph S. ... Wabasha
‡ Ekstrand, LeRoy M. ... Wabasha
‡ Ellis, Earl Wm. ... Elgin
‡ Flatt, John R. ... Wabasha
‡ Gjerde, William P. ... Lake City

‡ Habein, Harold C. ... Wabasha
‡ Mahle, Donald G. ... Plainview
Martin, Doreen A. ... Pepin, Wis.
‡ Ochsner, Clarence G. ... Wabasha
† Replogle, William H. ... Los Angeles, Calif.
‡ Sontag, David W. ... Lake City

WASECA COUNTY MEDICAL SOCIETY

Waseca County
Regular meetings, when called
Regular Meeting, January
Numebr of members—10

President
Swenson, Orvie J. ... Waseca
Secretary
Davis, Raymond D. ... Waseca
‡ Campbell, Wayne L. ... Waseca

‡ Davis, Raymond D. ... Waseca
† Florine, Martin C. ... Balboa Heights, C. Z.
†‡ Gallagher, Bernard J. ... Waseca
‡ Hottinger, Raymond C. ... Janesville
‡ Normann, Stephen T., Jr. ... Waseca

‡ Oeljen, Siegfried C. G. ... Waseca
‡ Olds, George H. ... New Richland
‡ Rohrer, Thomas P. ... Waseca
‡ Swenson, Orvie J. ... Waseca

WASHINGTON COUNTY MEDICAL SOCIETY

Washington and Dakota Counties
Regular meetings, 2nd Tuesday in each month except June, July and August
Annual meeting, December
Number of members—23

President
Kiolbasa, E. B. ... Stillwater
Secretary
Cottor, Robert E. ... Stillwater
Brabec, Paul F. ... Hastings
‡ Carlson, Russel E. ... Stillwater
Chappell, Elliott R. ... Stillwater
‡ Cottor, Robert E. ... Stillwater
Fasbender, Herman T. ... Hastings

†‡ Holcomb, Joel T. ... Marine-on-St. Croix
‡ Jenson, James E. ... Stillwater
Johnson, Robert H. ... Bayport
Johnson, O. Guy ... Bayport
Josewski, Raymond J. ... Stillwater
‡ Juergens, Manley F. ... Stillwater
Just, Herman J. ... Hastings
‡ Kiolbasa, Edward B. ... Stillwater
Kulzer, Norbert J. ... Hastings

‡ McCarten, Francis M. ... Stillwater
† Mensheha, Nicholas ... Minneapolis
Midboe, Gilbert T. ... Forest Lake
† Poirier, Joseph A. ... Forest Lake
Ruggles, George M. ... Forest Lake
‡ Sherman, Carnot H. ... Bayport
†‡ Stuhr, John W. ... Stillwater
Van Meier, Henry ... Stillwater
Weiss, Carl A. ... Hastings

WEST CENTRAL MINNESOTA MEDICAL SOCIETY

Big Stone, Pope, Stevens and Traverse Counties
Regular meetings, 1st Tuesday in March, May, September and November
Annual meeting in November
Number of members—27

President
Bucher, Foster D. ... Starbuck
Secretary
Zempel, Alan R. ... Starbuck
‡ Arneson, Arthur I. ... Morris
‡ Behmier, Frederick W. ... Morris
†‡ Bergan, Otto ... Clinton
† Bolsta, Charles ... Ortonville

‡ Bucher, Foster D. ... Starbuck
Burns, J. M. ... Graceville
Christenson, Carl E. ... Clinton
†‡ Eberlin, Edward A. ... Glenwood
‡ Eide, O. A. ... Hancock
‡ Hedemark, Homer H. ... Ortonville
Hedemark, Truman A. ... Ortonville
‡ Karn, Jacob F. ... Ortonville

Kolp, Berton A. ... Glenwood
‡ Kooda, Jennings C. ... Morris
Kozel, William ... Morris
‡ Lee, Gordon E. ... Glenwood
Lester, Theodore H. ... Browns Valley
Letson, Robert D. ... Glenwood
Lindberg, Alfred L. ... Wheaton
‡ Magnuson, Allen E. ... Wheaton

‡ Merrill, Robert W. .... Morris
‡ Oliver, Irwin L. .... Graceville
‡ Rossberg, Raymond A. .... Morris
Schuft, James R. .... Morris
‡ Swedenburg, Paul A. .... Glenwood
‡ Watson, Robert M. .... Morris
‡ Winge, H. C. .... Wheaton
‡ Zempel, Alan R. .... Starbuck

WINONA COUNTY MEDICAL SOCIETY

Winona County
Regular meetings, 2nd Monday in January, April, July and October
Annual meeting in January
Number of members—26

President
Testor, James V. .... Winona
Secretary
Heise, Herbert vR. .... Winona
‡ Boardman, Dalmon V. .... Winona
‡ Christensen, Eli E. .... Winona
‡ Degallier, Daniel .... Winona
‡ Fenske, Arnold .... Winona
‡ Finkelnburg, William O. .... Winona
‡ Hartwich, Roger F. .... Winona
‡ Heise, Herbert vR. .... Winona
‡ Heise, Paul vR. .... Winona
‡ Heise, Philip vR. .... Winona
‡ Hughes, Sidney O. .... Winona
‡ Johnson, Curtis M. .... Winona
‡ Johnston, Leonard F. .... Winona
‡ Loomis, George L. .... Winona
†‡ McLaughlin, Edmund M. .... Winona
‡ Mattison, Percy A. .... Winona
‡ Meinert, Albert E. .... Winona
‡ Roemer, Henry J. .... Winona
‡ Rogers, Charles W. .... Winona
‡ Satterlee, Howard W. .... Lewiston
‡ Schmidt, Hilmar R. .... Rushford
‡ Testor, James V. .... Winona
‡ Tweedy, John A. .... Winona
‡ Vollmer, Frederick J. .... Winona
‡ Wilson, Louis J. .... Rushford
‡ Wilson, Rolland H. .... Winona
‡ Younger, Lewis I. .... Winona

WRIGHT COUNTY MEDICAL SOCIETY

Wright County
Regular meetings, 1st Tuesday of every second month
Annual meeting in November
Number of members—14

President
Thielen, Robert D. .... St. Michael
Secretary
Catlin, Theodore J. .... Buffalo
‡ Anderson, Waldo P. .... Buffalo
‡ Bendix, Lester H. .... Annandale
† Catlin, John J. .... Buffalo
‡ Catlin, Theodore J. .... Buffalo
‡† Ellison, Frank E. .... Monticello
‡ Greenfield, William T. .... Cokato
‡ Guilfoile, Pierre J. .... Delano
‡ Hart, William E. .... Monticello
‡ Purves, G. Harland .... Buffalo
‡ Sandeen, Robert M. .... Buffalo
Shin, Rok W. .... Howard Lake
‡ Smorstok, Matthew B. .... Monticello
‡ Thielen, Robert D. .... St. Michael
Thomas, William H. .... Lindstrom

ZUMBRO VALLEY MEDICAL SOCIETY

Olmsted, Houston, Fillmore and Dodge Counties
Regular meetings, 1st Wednesday of odd numbered months
Annual meetings, 1st Wednesday in November
Number of members—658

President
Olson, Ernest A. .... Pine Island
Secretary
Johnson, E. W. .... Rochester
Executive Secretary
Fricke, R. E. .... Rochester
‡ Aaro, Leonard A. .... Rochester
‡ Achor, Richard W. P. .... Rochester
‡ Adson, Martin A. .... Rochester
‡ Affeldt, Daniel E. .... Kasson
‡ Ahlfs, Jacob J. .... Caledonia
Alfrey, Clarence P. .... Rochester
† Alicandri, Frank P. .... Rochester
Allaman, Loren E. .... Rochester
† Allen, Charles V. .... Rochester
‡ Allen, Edgar V. N. .... Rochester
† Altman, Jules .... Rochester
† Amberg, Samuel .... Rochester
† Amundsen, Melvin A. .... Rochester
‡ Andersen, Howard A. .... Rochester
†‡ Anderson, Mark J. .... Rochester
‡ Anderson, Markham J., Jr. .... Rochester
‡ Anderson, Milton W. .... Rochester
Angelos, S. Peter .... Rochester
Anzel, Sanford H. .... South Carolina
† Appleman, Robert M. .... Rochester
† Arnold, Thomas B. .... Rochester
Baars, Conrad W. .... Rochester
‡ Baggenstoss, Archie H. .... Rochester
‡ Bahn, Robert C. .... Rochester
‡ Bair, Hugo L. .... Rochester
¶ Bajec, Dusan .... Belgrade, Yugoslavia
‡ Baker, George S. .... Rochester
† Baker, Harry R. .... Hayfield
Baker, Hillier L., Jr. .... Rochester
† Bala, R. Marvin .... Rochester
†‡ Balfour, Donald C. .... Rochester
Balfour, William M. .... Lawrence, Kansas
Balme, Robert H. .... Rochester
† Banitt, Louis W. .... Rochester
‡ Banner, Edward A. .... Rochester
‡ Bargen, J. Arnold .... Temple, Texas
‡† Barker, Nelson W. .... Rochester
‡† Barnes, Arlie R. .... Rochester
‡ Barry, Maurice J., Jr. .... Rochester
‡ Bartholomew, Lloyd G. .... Rochester
‡ Bastron, James A. .... Rochester
‡ Bayrd, Edwin D. .... Rochester
‡ Beahrs, Oliver H. .... Rochester
† Becker, Kenneth L. .... Rochester
Beetham, William P., Jr. .... Rochester
† Belau, Paul G. .... Rochester
† Belcher, Rodney L. .... Rochester
† Belgrad, Richard .... Rochester
† Benedict, William L. .... Rochester
‡ Berge, Kenneth G. .... Rochester
Beringer, E. Duane .... Rochester
† Berke, Joseph J. .... Rochester
Berkman, David S. .... Rochester
‡ Berkman, John M. .... Rochester
‡ Bernatz, Philip E. .... Rochester
† Berry, Ronald N. .... Rochester
‡ Bianco, Anthony J., Jr. .... Rochester
‡ Bickel, William H. .... Rochester
† Bigelow, Charles E. .... Dodge Center
# Bigg, Richard L. .... Bremerton, Wash.
† Biggs, Alfred D., Jr. .... Rochester
# Billingsley, John S. .... Anniston, Alabama
Birdsall, Charles J. .... Rochester
‡ Black, B. Marden .... Rochester
‡ Blackburn, Charles M. .... Rochester
Boolukos, George P. N. .... Rochester
Botticelli, Max G. .... Rochester
† Bowen, Stephen F., Jr. .... Rochester
‡ Boyd, David A., Jr. .... Rochester
† Braasch, William F. .... Rochester
‡ Brandenburg, Robert O. .... Rochester
‡ Brannick, Thomas L. .... Rochester
Breslin, Donald J. .... Rochester
Britt, Wilbur F. .... Rochester
‡ Broadbent, James C. .... Rochester
‡ Brodhun, John C. .... Rochester
† Brookler, Morton I. .... Rochester
‡ Brown, Alexander E. .... Rochester
Brown, Arnold L. .... Rochester
† Brown, David N. .... Rochester
‡ Brown, Henry A. .... Rochester
‡ Brown, Joe R. .... Rochester
‡ Brown, Philip W. .... Rochester
‡ Brown, Philip W., Jr. .... Rochester
Brown, Robert C. .... Rochester
‡ Brunsting, Louis A. .... Rochester
† Buie, Louis A. .... Rochester
Bunting, William L. .... Rochester
Burbank, Mahlon K. .... Rochester
‡ Burchell, Howard B. .... Rochester
‡ Burgert, E. O., Jr. .... Rochester
‡ Burich, Harry F. .... Rochester
† Burk, Emmett K. .... Rochester
‡ Burke, Edmund C. .... Rochester
† Burnes, Edward A., Jr. .... Rochester
† Burton, Robert C. .... Rochester
‡ Butt, Hugh R. .... Rochester
Cadman, Norman L. .... Rochester
‡ Cain, James C. .... Rochester
Caldarola, Vincent T. .... Rochester
‡ Callahan, John A. .... Rochester
# Calverley, John R. .... San Antonio, Texas
† Camp, John D., Jr. .... Rochester
‡ Campbell, Donald C. .... Rochester
‡ Campbell, Malcolm K. .... Rochester
Carpenter, William B. .... Rochester
Carr, David T. .... Rochester
‡ Carryer, Haddon McC. .... Rochester
Carter, Earl T. .... Rochester
Carveth, Stephen W. .... Rochester
Casdorph, Herman R. .... Rochester
† Casey, John J. .... Rochester
Casey, Thomas H. .... Rochester
† Chaimov, Alan L. .... Rochester
† Chamberlain, Jack K. .... Rochester
‡ Childs, Donald S., Jr. .... Rochester
‡ Christensen, Norman .... Rochester
‡ Clagett, O. Theron .... Rochester
‡ Clark, Edward C. .... Rochester
† Clark, Leslie W. .... Manchester, Iowa
† Clifton, Theodore A. .... Hollywood, Florida
Cody, D. Thane .... Rochester
† Cohen, David F. .... Rochester
† Cohen, Donald M. .... Rochester
Cohen, Ellen K. .... Rochester
‡ Colby, Malcolm Y., Jr. .... Rochester
‡ Connolly, Daniel C. .... Rochester
‡ Cook, Edward N. .... Rochester
‡ Cooper, Talbert .... Rochester

‡ Corbin, Kendall B. .... Rochester
† Corn, David .... Rochester
† Corne, Robert A. .... Rochester
# Corr, William P. .... San Francisco, Calif.
‡ Corrigan, Cyril J. .... Rochester
Cottone, Francis J. .... Rochester
‡ Coventry, Markham B. .... Rochester
Crandall, Earle E. .... Rochester
Culp, Clyde E. .... Rochester
‡ Culp, Ormond S. .... Rochester
† D'Agostino, Anthony .... Rochester
‡ Dahlin, David C. .... Rochester
‡ Daly, David D. .... Rochester
† Damron, John C. .... Rochester
‡ Daugherty, Guy W. .... Rochester
Davidson, Allan D. .... Caledonia
# Davidson, Paul .... Oahu, Hawaii
† Davis, Austin C. .... Pompano Beach, Florida
‡ Davis, George D. .... Rochester
‡ Dearing, William H. .... Rochester
‡ Decker, David G. .... Rochester
† de la Vega, Daniel J. .... Rochester
Delano, James G. .... Rochester
‡ Devine, Kenneth D. .... Rochester
‡ DeWeerd, James H. .... Rochester
Dickson, Harrison M. .... Rochester
† Dickens, W. Norman .... Rochester
‡ Diessner, Grant R. .... Rochester
† Dietrich, Robert A. .... Rochester
Dion, Francis R. .... Rochester
‡ Divertie, Matthew .... Rochester
Dixon, Claude F. .... Rochester
‡ Dockerty, Malcolm B. .... Rochester
Dodds, Joseph J. .... Rochester
Dombrowski, Edmund T. .... Rochester
‡ Donoghue, Francis E. .... Rochester
‡ Douglass, Bruce E. .... Rochester
‡ Doyle, James R. .... Rochester
† Drips, Della G. .... Oronoco
† Dumont, Guy .... Rochester
‡ DuShane, James W. .... Rochester
† Dyck, Peter J. .... Rochester
‡ Dyer, John Allen .... Rochester
Dysart, Bonnar W. .... Rochester
‡ Elkins, Earl C. .... Rochester
‡ Ellis, F. Henry .... Rochester
‡ Emmett, John L. .... Rochester
Engel, Andrew G. .... Rochester
Engel, Stephen .... Rochester
Engler, Robert S. .... Rochester
‡ Erich, John B. .... Rochester
‡ Erickson, Donald J. .... Rochester
†‡ Eusterman, George B. .... Rochester
† Evarts, Arrah B. .... Rochester
‡ Faber, John E. .... Rochester
Fairbairn, John F. .... Rochester
Farmer, John L., Jr. .... Rochester
† Fatum, Paul J. .... Rochester
‡ Faulconer, Albert, Jr. .... Rochester
Feldmann, Floyd M. .... New York City
‡ Ferguson, Richard H. .... Rochester
‡ Ferris, Deward O. .... Rochester
†‡ Figi, Frederick A. .... Rochester
‡ Fluegel, John O. .... Rochester
Foss, Edward L. .... Rochester
‡ Foulk, William T., Jr. .... Rochester
Fox, Nelson M. Jr. .... Rochester
Francis, Robert L. .... Rochester
‡ Frethem, Allen A. .... Rochester
‡ Fricke, Robert E. .... Rochester
Friesen, Gerhard .... Rochester
† Frink, Richard J. .... Rochester
† Gabbert, Clayton R. .... Rochester
† Galbraith, Richard F. .... Rochester
† Gallaway, Jackson R. .... Rochester
†‡ Gambill, Carl M. .... Rochester
‡ Gambill, Earl E. .... Rochester
Gannon, Paul G. .... Rochester
Garrett, J. Marshall .... Rochester
‡ Gastineau, Clifford F. .... Rochester
Gatzke, Laurence D. .... Rochester
Gedge, Stafford W. .... Rochester
† Gelety, Joseph E. .... Rochester
‡ Geraci, Joseph E. .... Rochester
† Giffin, Herbert Z. .... Rochester
‡ Gifford, R. W., Jr. .... Rochester
Giles, William F. .... Rochester
Gill, Charles R. .... Rochester
Glick, Dallas D. .... Rochester
† Goethals, Paul L. .... Rochester
‡ Goldstein, Norman P. .... Rochester
Goldston, Anne Smith .... Rochester
† Goldston, Edgar C. .... Rochester
‡ Good, C. Allen, Jr. .... Rochester
† Goodwin, Andrew .... Rochester
Gordon, Alan L. .... Rochester
‡ Gould, Allan B., Jr. .... Rochester
Granberry, W. Malcolm .... Rochester
Graudins, Gunars .... Rochester
‡ Green, Paul A. .... Rochester
† Greenberg, Eugene .... Rochester
‡ Greene, Laurence F. .... Rochester
† Gregg, James A. .... Rochester
‡ Grindlay, John H. .... Rochester
‡ Gross, John B. .... Rochester
† Gutman, Arnold A. .... Rochester
‡ Hagedorn, Albert B. .... Rochester
‡† Haines, Samuel F. .... Rochester
‡ Hallberg, Olav Erik .... Rochester
*† Hallenbeck, Dorr F. .... Rochester
‡ Hallenbeck, George A. .... Rochester
‡ Hanlon, David G. .... Rochester
‡ Hanson, Norbert O. .... Rochester
‡ Hargraves, Malcolm .... Rochester
† Harrington, Stuart W. .... Rochester
‡ Harris, Lloyd E. .... Rochester
† Harrison, Carlos E. .... Rochester
‡ Harrison, Edgar G., Jr. .... Rochester
Hartridge, Virginia B. .... Rochester
Hartzell, John M. .... Rochester
Hauser, Harris M. .... San Antonio, Texas
† Hauser, Walter H. .... Rochester
† Havens, Fred Z. .... Riverside, Calif.
‡ Hayles, Alvin B. .... Rochester
† Heaton, John W., Jr. .... Rochester
‡ Heck, Frank J. .... Rochester
† Heidel, Werner .... Rochester
* Heilman, Fordyce R. .... Rochester
Helm, Walter J. .... Rochester
† Hench, Philip K. .... Rochester
‡ Henderson, Edward D. .... Rochester
‡ Henderson, John W. .... Rochester
‡ Henderson, Lowell L. .... Rochester
‡ Hepper, Norman G. .... Rochester
† Hewitt, Edith S. .... Rochester
† Hewitt, Richard M. .... Rochester
‡ Higgins, John A. .... Rochester
‡ Hill, John R. .... Rochester
‡ Hill, Richard W. .... Rochester
‡ Hines, Edgar A., Jr. .... Rochester
† Hitselberger, William E. .... Rochester
‡ Hodgson, Corrin H. .... Rochester
‡ Hodgson, John R. .... Rochester
Hoffman, David L .... Rochester
† Hoffmeister, Rex T. .... Rochester
† Holbrook, Margaret .... Rochester
‡ Holland, C. R. .... Rochester
‡ Hollenhorst, Robert W. .... Rochester
† Holley, Keith E. .... Rochester
‡ Holman, Colin B. .... Rochester
† Holmes, George H., Jr. .... Rochester
Holsinger, Donald R. .... Rochester
Homme, David V. .... Rochester
† Honet, Joseph C. .... Rochester
Hoover, Norman W. .... Rochester
Hopkins, Donald M. .... Rochester
Hopkins, James W. .... Rochester
†‡ Horton, Bayard T. .... Rochester
Howard, Eric G. .... Spring Valley
‡ Howard, Frank M., Jr. .... Rochester
Howard, Richard K. .... Rochester
‡ Howell, Llewelyn P. .... Rochester
Huff, James F. .... Rochester
‡ Huizenga, Kenneth A. .... Rochester
‡ Hunt, Arthur B. .... Rochester
‡ Hunt, James Calvin .... Rochester
‡ Hunter, James S., Jr. .... Rochester
Hunton, Donald B. .... Rochester
† Iliescu, John, Jr. .... Rochester
† Inlow, Robert P. .... Rochester
‡ Ivins, John C. .... Rochester
‡ Ivy, Horace K. .... Rochester
‡ Jackman, Raymond J. .... Rochester
‡ Janes, Joseph M. .... Rochester
* Johnson, Adelaide McF. .... Rochester
‡ Johnson, Carl E. .... Rochester
‡ Johnson, Einer W., Jr. .... Rochester
† Johnson, Leonard M. .... Rochester
Johnson, Ralph Allen .... Rochester
Johnson, Ralph B. .... Lanesboro
‡ Johnson, Victor .... Rochester
† Johnson, Walter K. .... Rochester
† Johnson, Walter L. .... Rochester
Johnson, Wendell A. .... Rochester
Johnson, William S. .... Rochester
† Jones, Hurley D. .... Rochester
Joyce, George L. .... Rochester
† Joyce, John W. .... Rochester
‡ Judd, Edward S. .... Rochester
‡ Juergens, John L. .... Rochester
Kaese, Werner E. .... Rochester
† Kaplan, Carl .... Rochester
# Kaye, Ronald L. .... Victorville, Calif.
‡ Kearns, Thomas P. .... Rochester
‡ Keating, Francis R., Jr. .... Rochester
† Keck, Stanley W. .... Rochester
‡ Keith, Haddow M. .... Rochester
†‡ Keith, Norman M. .... Rochester
‡ Kelly, Patrick J. .... Rochester
‡ Kennedy, Roger L. J. .... Rochester
Kennedy, W. Charles .... Rochester
‡ Kernohan, James W. .... Rochester
† Kettering, Ronald F. .... Rochester
‡ Kiely, Joseph M. .... Rochester
‡ Kierland, Robert R. .... Rochester
Kim, Robert .... Rochester
‡ Kincaid, Owings W. .... Rochester
† King, Frank K. .... Rochester
† King, John N. .... Rochester
‡ Kirby, Thomas J., Jr. .... Rochester
† Kirchner, G. Gary .... Rochester
‡ Kirklin, John W. .... Rochester
# Kirshen, Robert .... Chicago, Illinois
‡ Klass, Donald W. .... St. Paul
Knaff, Leo J. .... Rochester
‡ Knutson, Lewis A. .... Spring Grove
‡ Koelsche, Giles A. .... Rochester
Kohn, Eleanor M. .... Rochester
† Kornblum, Sherwin S. .... Rochester
Krabill, Donald R. .... Rochester
Krock, Felix A. .... Rochester
‡ Krusen, Frank H. .... Minneapolis
‡ Kvale, Walter F. .... Rochester
Kyle, Robert A. .... Boston, Mass.
‡ Lake, Clifford F. .... Rochester
† Larson, Richard E. .... Rochester
† Lauvstad, Walter A. .... Rochester
† Lee, John W. .... Rochester
† Lee, Ling Hong .... Rochester
† Lee, Raymond A. .... Rochester
‡ Lee, Robert E. .... Rochester
† Lehrman, Arthur .... Rochester
# Leigh, John E. .... Montgomery, Ala.
† Levine, Stanley R. .... Rochester
† Levis, Michael P. .... Rochester
Lidsky, Martin D. .... Rochester
Liebesman, William P. .... Rochester
‡ Lillie, John C. .... Rochester
‡ Lipscomb, Paul R. .... Rochester
# Lipson, Richard L. .... Havertown, Pa.
‡ Litin, Edward M. .... Rochester
‡ Litzow, Thaddeus, J. .... Rochester
‡ Lofgren, Karl A. .... Rochester
‡ Logan, George B. .... Rochester
‡ Love, J. Grafton .... Rochester
† Lyne, Benjamin W. .... Rochester
‡ McBean, James B. .... Rochester
‡ McConahey, William M., Jr. .... Rochester
† McCormick, Patrick J. .... Rochester
McGill, Douglas B .... Rochester
‡ McGoon, Dwight C. .... Rochester
McHenry, Martin .... Rochester
McIlhany, Mary Lou .... Albuquerque, N. M.
McIlrath, Donald C. .... Rochester
† McInerney, Gerald T. .... Rochester
McKillop, Robert G. .... Rochester
McPherson, James R. .... Rochester
† McRoberts, Jerry W. .... Rochester
† McVey, John L. .... Rochester
‡ MacCarty, Collin S. .... Rochester
† MacCarty, William C. .... Rochester
MacLean, Alexander R. .... Rochester
† Madsen, Donald O. .... Rochester
‡ Magath, Thomas B. .... Rochester
Magee, Charles J. .... Rochester
† Magid, Gail A. .... Rochester
† Magnuson, Frederick K. .... Rochester
‡ Maher, Frank T. .... Rochester
Malkasian, George D., Jr. .... Rochester
‡ Mankin, Harold T. .... Rochester
† Manning, Preston C., Jr. .... Rochester
† Manno, Nicholas J. .... Rochester
Marshall, Hiram W. .... Rochester
‡ Martens, Theodore G. .... Rochester
‡ Martin, Gordon M. .... Rochester
Martin, Harold R. .... Rochester
† Martin, John H. .... Rochester
‡ Martin, John T. .... Rochester
Martin, Maurice J. .... Rochester
‡ Martin, William J. .... Rochester
† Masson, Duncan M. .... Rochester
† Masson, James C. .... Rochester
‡ Mason, James K. .... Rochester
# Mastman, Gary J. .... Denver, Colorado
Mathieson, Don R. .... Rochester
† Matta, Carlos R. .... Rochester
Mayberry, William E. .... Rochester
Mayne, John G. .... Rochester
‡ Mayo, Charles W. .... Rochester
‡ Merritt, Wallace A. .... Rochester
† Metge, William R. .... Rochester
† Meyerding, Henry W. .... Rochester
Meyer, Vernon W. .... Rochester
Michener, William M. .... Rochester
# Mielke, John E. .... Fort Knox
‡ Miller, Roland D. .... Rochester
‡ Miller, Ross H. .... Rochester
‡ Millikan, Clark H. .... Rochester
‡ Mills, Stephen D. .... Rochester
† Missakian, Michael M. .... Rochester
† Moersch, Frederick P. .... Fort Lauderdale, Fla.
‡ Moersch, Herman J. .... Rochester
Moersch, Richard N. .... Rochester
‡ Moertel, Charles G. .... Rochester
‡ Molnar, George D. .... Rochester
† Monge, James J. .... Rochester
†‡ Montgomery, Hamilton .... Rochester
Mori, Hideo .... Rochester
‡ Morlock, Carl G. .... Rochester
‡ Morrow, George W., Jr. .... Rochester
† Moulton, Sumner E. .... Rochester
‡ Mulder, Donald W. .... Rochester

†	Mullady, Thomas F., III	Rochester
	Newton, St. Elmo, III	Rochester
	Muntz, Keith S.	Rochester
	Murphy, Thomas R.	Cherokee, Iowa
†	Murray, Robert A., Jr.	Rochester
	Mussey, Mary E.	Rochester
‡	Myers, Thomas T.	Rochester
†	Neault, Roger W.	Rochester
	Nehring, Jesse P.	Preston
†	Neldner, Kenneth H.	Rochester
†	Nelson, James W.	Rochester
	Nelson, Jerald C.	Rochester
‡	Nichols, Donald R.	Rochester
†	Nirschl, Robert P.	Rochester
†	Nolan, Alfred C.	Rochester
#	Nolan, Robert B.	Chelsea, Mass.
*	Norris, Neil T.	Caledonia
	Norstrom, Craig W.	Rochester
†	Odel, Howard M.	Rochester
	Okihiro, Michael M.	Rochester
†	Olin, Ronald	Rochester
†	Olsen, Arthur M.	Rochester
‡	Olson, Ernest A.	Pine Island
	Olson, Grant E.	West Concord
	Ongley, Patrick A.	Rochester
	Onsgard, L. Kenneth	Houston
†	Osmon, Kent L.	Rochester
‡	Osmundson, Philip J.	Rochester
‡	Owen, Charles A., Jr.	Rochester
	Ownbey, Richard P.	Rochester
#	Packard, Dean W.	Unknown
†	Palumbo, Pasquale J.	Rochester
‡	Parris, Jaime	Rochester
‡	Parker, Robert L.	Rochester
	Parkhill, Edith M.	Rochester
‡	Parkin, Thomas W.	Rochester
†	Parshall, William A.	Rochester
‡	Pascuzzi, Chris A.	Rochester
‡	Patrick, Robert T.	Rochester
†	Patterson, Richard J.	Rochester
‡	Paulson, John A.	Rochester
	Payne, William S.	Rochester
	Pease, Gertrude L.	Rochester
†	Peck, Donald A.	Rochester
‡†	Pemberton, John de J.	Rochester
‡	Perry, Harold O.	Rochester
†	Perry, Hugh, Jr.	Rochester
†	Perry, Richard E.	Rochester
‡	Peters, Gustavus A.	Rochester
‡	Petersen, Magnus C.	Rochester
‡	Peterson, Lowell F. A.	Rochester
†	Piper, Monte C.	La-Canada, Calif.
	Pitlyk, Paul J.	Rochester
‡	Plum, George E.	Rochester
†	Pollard, John W.	Rochester
‡	Polley, Howard F.	Rochester
‡	Pool, Thomas L.	Rochester
	Posey, John W.	Rochester
†	Potter, Wilfred M.	Rochester
‡	Pratt, Joseph Hyde, Jr.	Rochester
	Prickman, Louis E.	Rochester
‡	Priestley, James T.	Rochester
‡	Pugh, David G.	Rochester
†	Pulec, Jack L.	Rochester
‡	Purnell, Don C.	Rochester
‡	Ralston, Donald E.	Rochester
†‡	Randall, Lawrence M.	Rochester
‡	Randall, Raymond V.	Rochester
	Reese, David F.	Rochester
‡	Reitemeier, Richard J.	Rochester
‡	ReMine, William H., Jr.	Rochester
‡	Restall, Charles J.	Rochester
	Retzlaff, John	Rochester
#	Reynolds, James F.	So. Madley, Mass.
#	Reynolds, William A.	New York, N. Y.
	Richter, Paul H.	Fergus Falls
	Ries, Gerald E.	Rochester
	Riggs, Byron L., Jr.	Rochester
	Risser, Aldon F.	Stewartville
	Rivers, Morris H.	Rochester
	Roedling, Herbert	Rochester
‡	Rogne, William G.	Rochester
‡	Rome, Howard P.	Rochester
‡	Rooke, Edward D.	Rochester
	Ross, James V.	Rochester
	Ross, Margaret	Rochester
‡	Rovelstad, Randolph A.	Rochester
	Rowland, Spencer A.	Rochester
‡	Rucker, Charles W.	Rochester
	Rufolo, Eugene H.	Rochester
†	Rulon, John T.	Rochester
‡	Rushton, Joseph G.	Rochester
‡	Rynearson, Edward H.	Rochester
†	Salamone, Charles R.	Rochester
‡	Salassa, Robert M.	Rochester
†	Sanderson, David R.	Rochester
	Sasano, Joseph R., Jr.	Rochester
‡	Sauer, William G.	Rochester
	Sayre, George P.	Rochester
‡	Scanlon, Paul W.	Rochester
	Schaefer, Joseph C.	Orange Park, Fla.
†	Schattenberg, Thomas T.	Rochester
	Schirger, Alexander	Rochester
	Schmidt, Herbert W.	Rochester
	Schmidt, Charles D.	Rochester
‡	Schmidt, Herbert W.	Rochester
‡	Scholz, Donald A.	Rochester
#	Schwartz, John T.	Norfolk, Virginia
#	Scott-Miller, James R.	Phoenixville, Pa.
‡	Scudamore, Harold H.	Rochester
	Scruggs, Thomas	Rochester
†	Sedlack, Richard E.	Rochester
‡	Seldon, Thomas H.	Rochester
†	Shamblin, James R., Jr.	Rochester
	Sheps, Sheldon G.	Rochester
†	Sherrick, Donald W.	Rochester
‡	Shick, Richard M.	Rochester
	Shugart, Robert R.	Rochester
†	Sibley, William L., III	Rochester
‡	Siekert, Robert G.	Rochester
	Silverman, Lloyd	Rochester
	Silverstein, Murray N.	Rochester
†	Silvis, Stephen E.	Rochester
†	Simons, John N.	Rochester
‡	Simonton, Kinsey M.	Rochester
	Skaug, Harold M.	Chatfield
‡	Slocumb, Charles H.	Rochester
†‡	Smith, Frederick L.	Rochester
†	Smith, Harry L.	Rochester
	Smith, John H.	Rochester
‡	Smith, Lucian A.	Rochester
‡	Smith, Ralph E.	Rochester
‡	Smith, Reginald A.	Rochester
	Sones, Donald A.	Rochester
†	Sorenson, James M.	Rochester
	Souders, John C.	Rochester
‡	Soule, Edward H.	Rochester
‡	Spencer, Robert J.	Rochester
	Spiekerman, Ralph E.	Rochester
‡	Spittel, John A., Jr.	Rochester
‡	Sprague, Randall G.	Rochester
†	Stanley, Kenneth E., Jr.	Rochester
‡	Staufer, Maurice H.	Rochester
‡	Steinhilber, Richard M.	Rochester
†	Stewart, James R.	Rochester
‡	Stickney, J. Minott	Rochester
‡	Stillwell, George K.	Rochester
‡	Stilwell, George G.	Rochester
	Stoltze, Cynthia A.	Rochester
†	Striebel, James L.	Rochester
‡	Stroebel, Charles F., Jr.	Rochester
‡	Sullivan, Charles R.	Rochester
	Summerskill, William H. J.	Rochester
‡	Svien, Hendrik J.	Rochester
	Swedlund, Harry A.	Rochester
†	Sweeney, William A.	Rochester
‡	Symmonds, Richards E.	Rochester
	Taswell, Howard F.	Rochester
‡	Tauxe, Welby N.	Rochester
†	Templeton, Mary J.	Rochester
	Terry, Howard R., Jr.	Rochester
	Thomas, Juergens E.	Rochester
‡	Thompson, Gershom J.	Rochester
	Thompson, John W., III	Rochester
	Thurber, Deloran L.	Rochester
‡	Tillisch, Jan H.	Rochester
	Titus, Jack L.	Rochester
	Treacy, William	Rochester
	Trucker, Albert L.	Rochester
	Tubbs, Francis A.	Rochester
	Tuffanelli, Denny L.	Rochester
†	Tutton, Roger H.	Rochester
‡	Uihlein, Alfred	Rochester
‡	Underdahl, Laurentius O.	Rochester
‡	Utz, David C.	Rochester
	Utz, Philip H.	La Crescent
‡	Van Herik, Martin	Rochester
‡	Vaughn, Louis D.	Rochester
‡	Verby, John E., Jr.	Rochester
	Virnig, Hildegard, J.	Caledonia
†	Vogel, Melvin D.	Rochester
	Von Heimburg, Roger L.	Rochester
*†	Wagener, Henry P.	Rochester
†	Wagoner, Richard D.	Rochester
‡†	Wakim, Khalil G.	Rochester
†	Walters, Edward W.	Rochester
‡	Walters, Waltman	Rochester
‡	Ward, Louis E.	Rochester
	Warren, John W.	Rochester
‡	Watkins, Charles H.	Rochester
‡	Waugh, John M.	Rochester
†	Weber, John C.	Rochester
‡	Weed, Lyle A.	Rochester
‡	Weeks, Richard E.	Rochester
‡	Weidman, William H.	Rochester
†	Weinstein, Eugene C.	Rochester
†‡	Weir, James F.	Rochester
	Weisenheimer, Edward J.	Rochester
	Weisz, Samuel	Rochester
‡	Welch, John S.	Rochester
‡	Wellman William E.	Rochester
	Wellner, Theodore O.	Rochester
‡	Wente, Harold A.	Rochester
	West, J. Robert	Rochester
	Westrup, John E.	Lanesboro
‡	Weyhrauch, William R.	Rochester
‡	Whisnant, Jack P.	Rochester
†	Whitaker, John J.	Rochester
#	White, James C.	Oakland, Calif.
	White, Robert J.	Rochester
	Whitman, Edwin J.	Rochester
	Wiener, Jerry M.	Rochester
#	Wilbur, Dwight L., III	Camp Pendleton, Calif.
†	Wilken, Robert W.	Rochester
‡	Williams, Henry L.	Rochester
	Wilson, Paul F.	Rochester
‡	Wilson, Robert B.	Rochester
‡	Wilson, Viktor O.	Rochester
‡	Winkelmann, Richard K.	Rochester
#	Winter, Malcolm D., Jr.	Miles City, Mont.
	Witten, David M.	Rochester
‡	Wollaeger, Eric E.	Rochester
‡†	Woltman, Henry W.	Rochester
‡	Wood, Lloyd T.	Rochester
‡	Woolner, Lewis B.	Rochester
‡	Worthington, John W., Jr.	Rochester
	Yadusky, Donald P.	Rochester
†	Yamaguchi, Donald M.	Rochester
‡	Yoss, Robert E.	Rochester
‡	Young, Henry H.	Rochester
†	Zimmerman, A. Leonard	Rochester
†	Zitnik, Ralph S.	Rochester

Alphabetic Roster

Key to Symbols:
†Life, Resident or Associate Members; ‡Military Service; *Deceased; ¶Honorary

†	Aanes, Almer M.	Red Wing
	Aaro, Leonard A.	Rochester
	Abraham, Arden L.	Duluth
	Abrams, Alexander Jr.	St. Paul
	Abramson, Milton	Minneapolis
	Achor, Richard W. P.	Rochester
	Adair, Albert F., Jr.	St. Paul
†	Adams, Bertram S.	Hibbing
	Adams, Harold R.	St. Paul
	Adams, Patrick J.	Chaska
	Addy, Edward R.	Gilbert
	Adkins, Charles D.	Minneapolis
	Adkins, Galen H.	Sandstone
	Adkins, James T.	Bertha
	Adson, Martin A.	Rochester
	Affeldt, Daniel E.	Kasson
	Aga, John H.	Brainerd
†	Ager, Ernest A.	Minneapolis
	Agustsson, Hreidar	Minneapolis
	Ahern, Eugene E.	Minneapolis
	Ahlfs, Jacob J.	Caledonia
	Ahlstrom, Robert C.	Braham
	Ahola, Kenneth E.	Hibbing
	Ahren, Gene J.	Red Wing
*†	Ahrens, Albert E.	St. Paul
	Ahrens, Curtis F.	Duluth
	Ahrens, Robert M.	St. Paul
	Akins, Willard M.	Red Wing
*	Albrecht, H. H.	Lindstrom
	Alcorn, William J.	Wabasso
	Alden, John F., Jr.	St. Paul
	Alden, W. Charles	Kimball
	Alfrey, Clarence P.	Rochester
	Alexander, Harlan A.	Minneapolis
†	Alicandri, Frank P.	Rochester
	Aling, Charles A.	Minneapolis
	Allaman, Loren E.	Rochester
†	Allen, Charles V.	Rochester
	Allen, Edgar V. N.	Rochester
	Allen, John H.	Montevideo
	Allison, David D.	Litchfield
†	Altman, Jules	Rochester
†	Altnow, Hugo O.	Coral Gables, Florida
	Alton, Donald G.	St. Paul
	Amatuzio, Donald S.	Minneapolis
†	Amberg, Samuel	Rochester
†	Ambrus, Laszlo	Los Angeles, California
	Amerongen, Werner W.	St. Paul
†	Amundsen, Melvin A.	Rochester
	Anderegg, Alfred F.	Minneapolis
	Andersen, Howard A.	Rochester
	Andersen, James G.	Minneapolis
	Anderson, Arden O.	Brainerd
	Anderson, Arnold S.	St. Louis Park
	Anderson, Chester A.	Hector
	Anderson, Chester A.	Madison
	Anderson, David M.	St. Louis Park
	Anderson, David P., Jr.	Austin
†	Anderson, Edward D.	Gstaad, Switzerland
	Anderson, Ernest R.	Minneapolis
	Anderson, Franklin C.	Owatonna
	Anderson, Harold J.	Austin
	Anderson, James J.	St. Paul
	Anderson, John A.	Minneapolis
	Anderson, John T.	St. Paul
	Anderson, Jo E.	Elk River
	Anderson, John W.	Blue Earth
	Anderson, Karl W.	Minneapolis
	Anderson, Margaret C.	St. Paul
†	Anderson, Mark J.	Rochester
	Anderson, Markham J., Jr.	Rochester
	Anderson, Milton W.	Rochester
	Anderson, Oscar D.	North Mankato
†	Anderson, Richard E.	Willmar
	Anderson, Richard W.	Minneapolis
	Anderson, Richard W.	Aurora
	Anderson, Roger L.	Minneapolis
	Anderson, Roland G.	Thief River Falls
	Anderson, U. Schuyler	Minneapolis
	Anderson, Waldo P.	Buffalo
	Anderson, Wallace E.	Clearbrook
	Anderson, Wallace E.	Minneapolis
	Anderson, Wallace R.	Austin
	Anderson, Werner W.	Brainerd
	Anderson, William H.	Minneapolis
	Anderson, William T.	Minneapolis
†	Andreassen, Einar C.	Minneapolis
	Andreassen, Rolf L.	Mineapolis
	Andresen, Karl d'A	Minneapolis
	Andrews, Robert S.	Minneapolis
†	Andrews, Roy N.	Mankato
	Angelos, S. Peter	Rochester
	Ankner, Frank J.	Minneapolis
	Anonsen, Richard E.	Minneapolis
	Antonow, Arthur M.	Virginia
‡	Anzel, Sanford H.	South Carolina
†	Appleman, Robert M.	Rochester
†	Arends, Archabald L.	Minneapolis
	Arey, S. Lane	Minneapolis
	Ahelger, Stuart W.	Minneapolis
	Arlander, Clarence E.	Minneapolis
	Arling, Leonard S.	Minneapolis
	Arms, James J.	Minneapolis
	Armstrong, Byron H.	Hopkins
	Armstrong, Ralph S.	Winnebago
	Arnesen, John F.	Owatonna
	Arnesen, Paul M.	Minneapolis
	Arneson, Arthur I.	Morris
	Arndt, Harry W.	Detroit Lakes
	Arnold, Ann W.	Minneapolis
	Arnold, Thomas B.	Rochester
	Arnquist, Andrew S.	St. Paul
	Arny, Frederick P.	St. Paul
	Arvidson, Carl G.	Minneapolis
	Arzt, Philip K.	St. Paul
	Asta, Joseph J.	Duluth
†	Athens, Alvin G.	Duluth
	Atmore, William G.	Duluth
	Aufderheide, Arthur C.	Duluth
	Aulick, Ernest J.	Paynesville
	Aurelius, J. Richards	St. Paul
	Ausman, Duane R.	St. Paul
	Austrian, Sol	St. Paul
	Autrey, William A.	St. Cloud
	Azad, A. M.	Minneapolis
	Baars, Conrad W.	Rochester
	Babb, Frank S.	St. Paul
†	Backer, Gordon L.	Rochester
	Backus, Byron C.	Cloquet
	Backus, Lloyd B.	Cloquet
	Backus, Reno W.	Nopeming
	Badeaux, George I.	Brainerd
	Bader, J. L.	Slayton
	Baggenstoss, Archie H.	Rochester
	Baggenstoss, Osmond J.	Minneapolis
	Bagley, Charles M.	Duluth
	Bagley, Elizabeth C.	Duluth
	Bagley, Russell W.	Minneapolis
†	Bagley, William R.	Duluth
	Bah, Merle C.	Minneapolis
	Bahn, Robert C.	Rochester
	Baich, Velemir M.	Coleraine
	Bair, Hugo L.	Rochester
*	Baird, Joseph W.	Minneapolis
	Baird, Raymond L.	St. Paul
¶	Bajec, Dusan	Belgrade, Yugoslavia
	Baken, Melvin P.	Minneapolis
	Baken, Melvin P., Jr.	Minneapolis
	Baker, Abe. B.	Minneapolis
†	Baker, Alfred T.	Minneapolis
	Baker, George S.	Rochester
†	Baker, Harry R.	Hayfield
	Baker, Hillier L., Jr.	Rochester
	Baker, Jeannette L.	Fergus Falls
	Baker, John H.	New Ulm
	Baker, Milton E.	Minneapolis
	Baker, Norman H.	Fergus Falls
	Bakke, Arnold C.	Minneapolis
	Bakkila, Henry E.	Duluth
†	Bala, R. Marvin	Rochester
	Balcome, Milton M.	St. Paul
	Baldzikowski, Ralph A.	Rochester
	Baleisis, Peter	Minneapolis
	Balfour, Donald C.	Rochester
	Balfour, William M.	Lawrence, Kansas
	Balkin, Samuel G.	Minneapolis
	Balme, Robert H.	Rochester
	Balmer, Albert I.	Duluth
	Balogh, Charles J.	Minneapolis
†	Banitt, Louis W.	Rochester
	Bank, Harry E.	Minneapolis
	Banner, Edward A.	Rochester
	Barber, Tracy E.	Austin
	Bardon, Richard	Duluth
	Bargen, J. Arnold	Temple, Texas
	Barker, John D.	Duluth
†	Barker, Nelson W.	Rochester
†	Barnes, Arlie R.	Rochester
	Barnes, Richard E.	Aurora
	Barnett, Joseph M.	St. Paul
	Barnett, Robert M.	Minneapolis
†	Barney, Leon A.	Duluth
	Barno, Alex	St. Louis Park
	Barr, James S.	Elmore
	Barr, Lowell C.	Albert Lea
	Barr, Maxwell M.	Minneapolis
	Barr, Robert N.	Minneapolis
	Barr, Ronald W.	Montevideo
	Barrett, Earl E.	Duluth
	Barrett, Patrick J.	Minneapolis
	Barron, Jasse J.	Minneapolis
†	Barron, Moses	Minneapolis
	Barron S. Steven	Minneapolis
†	Barry, George J.	Minneapolis
	Barry, Maurice J., Jr.	Rochester
†	Barsness, Nellie O. N.	St. Paul
	Bartholomew, Lloyd G.	Rochester
	Bartness, John	Albert Lea
	Bartzen, Peter J.	Duluth
	Basinger, Harold P.	Windom
	Basinger, Homer P.	Windom
	Bastron, James A.	Rochester
	Bateman, Clarence V.	Breckenridge
	Batdorf, B. Niles	Mankato
	Bauer, Eugene L.	St. Paul
	Bauer, Paul G.	Faribault
	Baumgartner, Florian H.	Albany
	Bayley, E. Covell	Lake City
	Bayrd, Edwin D.	Rochester
	Beach, Northrop	Minneapolis
	Beahrs, Oliver H.	Rochester
	Bean, Charles N.	Waconia
	Beargie, Richard J.	Rochester
	Beaton, J. Gordon	Northfield
	Beck, Charles J.	North St. Paul
†	Beck, Richard L.	Rochester
†	Becker, Arnetta M.	Unknown
†	Becker, Kenneth Louis	Rochester
	Becker, Frederick T.	Duluth
	Beckering, Gerrit	Edgerton
*	Bedford, Edgar	Minneapolis
	Bedford Fred G.	Minneapolis
	Beech, Raymond H.	St. Paul
	Beek, Harvey O.	St. Paul
	Beer, John J.	St. Paul
	Beetham, William P., Jr.	Rochester
	Behmler, Frederick Wm.	Morris
	Behr, Orlo K.	Crookston
	Behrendt, Vera M.	Willmar
	Beirstein, Samuel	Minneapolis
	Beiswanger, Richard H.	Minneapolis
†	Belau, Paul G.	Rochester
†	Belcher, Rodney L.	Rochester
	Belcher, Royden A.	Little Falls
†	Belgrad, Richard	Rochester
	Bell, Donald C.	Minneapolis
	Bell, Elexious T.	Minneapolis
	Bellomo, James	St. Paul
	Bellomo, John	Fairmont
	Bellville, Titus P.	Minneapolis
	Belzer, Meyer S.	Minneapolis
	Bendel, Richard P.	Minneapolis
	Bender, James H.	Brainerd
	Bendix, Lester H.	Annandale
†	Benedict, William L.	Rochester
	Benell, Otto E.	Virginia
	Benepe, James L.	St. Paul
	Benesh, Louis A.	Minneapolis
	Benjamin, Edwin G.	Minneapolis
	Benjamin, Harold G.	Minneapolis
	Benjamin, Robert B.	Minneapolis
	Benjamin, Walter G.	Pipestone
	Benson, Alfred H.	Little Falls
	Benthack, Elaine M.	St. Paul
	Bepko, Marie K. (Mrs. Puumala)	Cloquet
	Berdez, George L.	Duluth
	Berg, Arnold M.	Roseau
	Berg, Clinton C.	Wayzata
†	Bergan, Otto	Clinton
	Bergan, Robert O.	Duluth
	Berge, Harry L.	Mora
	Berge, Kenneth G.	Rochester
	Berger, Alex G.	Minneapolis
	Bergeron, Dale A.	LeSueur
	Bergh, George S.	Minneapolis
	Bergh, Solveig M.	Minneapolis
	Berglund, Alvin E.	Cambridge
	Berglund, Eldon B.	Minneapolis
	Bergman, Oscar B.	St. James
	Bergquist, James R.	Minneapolis
	Beringer, E. Duane	Rochester

†	Berke, Joseph J.	Rochester
	Berkman, David S.	Rochester
	Berkman, John M.	Rochester
	Berkwitz, Nathaniel J.	Minneapolis
	Berman, Reuben	Minneapolis
	Bernatz, Philip E.	Rochester
†	Bernhisel, Harris G.	St. Paul
	Bernier, Merrill J.	North St. Paul
	Bernstein, William C.	St. Paul
	Berris, Harold	Minneapolis
	Berry, Jack T.	Albert Lea
†	Berry, Ronald N.	Rochester
	Bessesen, Alfred N., Jr.	Minneapolis
	Beuning, John B.	St. Cloud
	Bevis, William D.	Minneapolis
	Bianco, Anthony J.	Duluth
	Bianco, Anthony J., Jr.	Rochester
	Bicek, Joseph F.	St. Paul
	Bickel, William H.	Rochester
	Bieter, Raymond N.	Minneapolis
†	Bigelow, Charles E.	Dodge Center
#	Bigg, Richard L.	Bremerton, Washington
†	Biggs, Alfred D., Jr.	Rochester
	Bigler, Earl E.	Perham
	Bigler, Ivan E.	Perham
	Bilka, Paul J.	Minneapolis
	Billings, Harry H.	Red Wing
#	Billingsley, John S.	Anniston, Alabama
	Binder, Manuel R.	Minneapolis
†	Binet, Henry E.	Grand Rapids
	Bingham, George C.	Bird Island
*†	Binger, Henry E.	Phoenix, Arizona
	Birdsall, Charles J.	Rochester
	Bissinger, Lester L.	Brainerd
	Bittick, Wilbur H.	Minneapolis
	Bjornson, Robert G. B.	Minneapolis
	Black, B. Marden	Rochester
	Black, Earl J.	St. Paul
	Black, William A.	New Ulm
	Blackburn, Charles M.	Rochester
	Blackburn, Henry W., Jr.	St. Paul
	Blackmore, Sidney C.	Biwabik
	Blake, Allan J.	Hopkins
	Blake, James A.	Hopkins
	Blake, Paul S.	Hopkins
†	Blakey, Adam R.	Osakis
	Bloedel, Traugott J.	Osseo
	Blomberg, William R.	St. Paul
	Bloom, David	Minneapolis
	Bloom, Joseph	Silver Bay
	Bloom, Norman B.	Minneapolis
	Blumberg, Henry B.	St. Paul
*	Blumenthal, Jacob S.	Minneapolis
	Blumer, Arlo R.	Albert Lea
	Boardman, Dalmon V.	Winona
†	Bock, Rolland A.	St. Paul
	Bodaski, Albert A.	Tyler
	Boecker, Bernhard	Duluth
	Boehrer, John J.	Minneapolis
	Bofenkamp, Benjamin	Minneapolis
	Bofenkamp, Ferdinand W.	Luverne
	Bohn, Donald G.	Minneapolis
	Boies, Lawrence R.	Minneapolis
	Boline, Clifford A.	Battle Lake
†	Bolsta, Charles	Ortonville
	Bolstad, Owen C.	Little Falls
	Bolz, J. Arnold	Grand Rapids
	Boman, Paul G.	Duluth
	Bonello, Frank J.	St. Paul
†	Bonner, John L.	St. Paul
	Boody, George J., Jr.	Cambridge
	Boolukos, George P. N.	Rochester
	Boone, Ervin S.	Luverne
†	Booth, Albert E.	Minneapolis
	Borg, Joseph F.	St. Paul
	Borgerson, Arthur H.	Long Prairie
†	Borgeson, Egbert J.	St. Paul
	Borman, Chauncey N.	Minneapolis
	Boroson, Hugh N.	Thief River Falls
	Borowicz, Leonard A.	Minneapolis
	Bosland, Howard G.	Willmar
†	Bossert, Clarence S.	Mora
	Bottolfson, Bottolf T.	Moorhead
†	Bouma, Lewis R.	St. Paul
	Bouquet, Bertram J.	Wabasha
	Bouthilet, Florence J.	St. Paul
	Bowen, Robert L.	Hibbing
†	Bowen, Stephen F., Jr.	Rochester
	Bowers, Gordon G.	Minneapolis
	Bowers, Robert N.	Lake City
	Bowlin, Paul F.	Minneapolis
	Boyd, Frank E.	Jasper
	Boyer, Samuel H., Jr.	Duluth
	Boyle, Francis J.	Springfield
	Boynton, Ruth E.	Minneapolis
	Boysen, Herbert	Madelia
	Bozanich, Milosh S.	St. Cloud
†	Braasch, William F.	Rochester
	Brabec, Paul F.	Hastings
	Bradley, Jeanne B.	Minneapolis
	Bradley, John G.	Minneapolis
†	Brand, William A.	Redwood Falls
	Brandenberg, Robert O.	Rochester
	Brandt, Henry E.	Minneapolis
†	Branham, Donald S.	Deer Park, Wis.
	Bratholdt, James W.	Watertown
	Brannick, Thomas L.	Rochester
†	Bratrud, Arthur F.	Minneapolis
†	Bratrud, Edward	Thief River Falls
	Bratrude, Earl J.	St. James
	Braun, Ohrmundt Carl	Grand Rapids
	Braun, Rene	Minneapolis
	Brauti, Erling F.	Minneapolis
†	Bray, Elwyn R.	St. Paul
	Bray, Philip N.	Duluth
	Breitenbucher, Robert B.	Minneapolis
	Brekke, Harvey J.	Minneapolis
	Brennan, Joseph G.	Minneapolis
	Breslin, Donald J.	Rochester
	Bretzke, Carl O.	Hutchinson
	Bridge, Allyn G.	Minneapolis
	Briggs, John F.	St. Paul
	Brigham, Charles Fay Jr.	St. Cloud
	Brill, Alice K.	Minneapolis
	Brink, Adlai A.	Baudette
	Brink, Donald M.	Hutchinson
	Britt, Wilbur F.	Rochester
	Broadbent, James C.	Rochester
	Broadie, Thomas E.	St. Paul
	Brockway, Roger W.	Grand Rapids
	Brodhun, John C.	Rochester
	Brodie, Walter D.	St. Paul
	Broker, Henry M.	St. Cloud
†	Brooker, Warren J.	Minneapolis
†	Brookler, Morton I.	Rochester
†	Brooks, Leonard J.	Virginia
†	Brooks, Charles N.	Minneapolis
	Brown, Alexander E.	Rochester
	Brown, Arnold L.	Rochester
	Brown, Cyrus C., Jr.	Duluth
†	Brown, David N.	Rochester
	Brown, Edgar D.	St. Petersburg, Florida
	Brown, Glenn W.	Halstad
	Brown, Henry A.	Rochester
	Brown, Ian A.	St. Paul
	Brown, James E., Jr.	St. Paul
	Brown, Joe R.	Rochester
*†	Brown, John C.	Los Gatos, California
	Brown, John M.	West St. Paul
	Brown, Philip W.	Rochester
	Brown, Philip W., Jr.	Rochester
	Brown, Robert C.	Rochester
	Brown, Russell T.	Browerville
	Brown, William D.	Minneapolis
	Brown, William D., Jr.	Minneapolis
	Bruhl, Heinz, H.	Faribault
	Brunsting, Louis A.	Rochester
	Brusegard, James F.	Red Wing
	Bryant, Emmett P.	Chisholm
	Bucher, Foster D.	Starbuck
	Buchstein, Harold F.	Minneapolis
†	Buck, Frederick H.	Shakopee
	Buckley, Joseph J.	Minneapolis
	Buckley, Robert P.	Duluth
	Buesgens, Ralph H.	Waterville
†	Buie, Louis A.	Rochester
	Buie, Louis A., Jr.	Minneapolis
	Buirge, Raymond E.	Minneapolis
	Bulinski, Theodore J	St. Paul
	Bullock, Leon J.	Virginia
	Bunker, Bevan W.	Anoka
	Bunting, William L.	Rochester
	Burbank, Mahlon K.	Rochester
	Burch, Edward P., II	St. Paul
	Burchell, Howard B.	Rochester
	Buresh, Kenneth L.	Westbrook
	Burgert, E. O., Jr.	Rochester
	Burich, Harry F.	Rochester
†	Burk, Emmett K.	Rochester
	Burke, Edmund C.	Rochester
	Burklund, Edwin C.	St. Paul
	Burlingame, David A.	St. Paul
	Burnham, Wesley H.	Minneapolis
	Burman, Richard E.	Aitkin
	Burmeister, Richard O.	St. Paul
†	Burns, Edward A., Jr.	Rochester
	Burnett, Joseph W.	New Ulm
	Burnham, Wesley H.	Minneapolis
†	Burns, Catherine	Excelsior
	Burns, John M.	Graceville
*†	Burns, Robert M.	St. Paul
	Burseth, Edgar C.	Mora
†	Burton, Carl G.	St. Paul
†	Burton, Robert C.	Rochester
	Bush, Robert P.	St. Paul
	Bushard, Wilfred J.	Minneapolis
	Busher, Herbert H.	St. Paul
	Butler, John K.	Cloquet
	Butt, Hugh R.	Rochester
†	Butturff, Carl R.	Freeborn
†	Butzer, John A.	Mankato
	Butzer, John F.	Mankato
	Buzzelle, Leonard K.	Minneapolis
	Byrne, William J.	St. Paul
	Cable, Morris L.	Minneapolis
	Cabot, Clyde M.	Minneapolis
	Cadman, Norman L.	Rochester
	Cain, Clark L.	St. Paul
	Cain, James C.	Rochester
	Cain, James H.	Alexandria
	Cairns, Robert J.	Redwood Falls
	Caldarola, Vincent T.	Rochester
†	Calhoun, Frank W.	Albert Lea
	Calin, Stanford H.	St. Paul
*	Callahan, Francis F.	St. Paul
	Callahan, John A.	Rochester
†	Callan, Joseph A.	Virginia
†	Callewart, Robert A.	Minneapolis
*	Calverley, John K.	San Antonio, Texas
†	Cameron, Isabell L.	Minneapolis
	Cameron, John H.	Crookston
†	Camp, John D., Jr.	Rochester
	Camp, Ray J.	Madison
	Campaigne, Robert J.	Duluth
	Campbell, Dennis V.	Fergus Falls
	Campbell, Donald C.	Rochester
	Campbell, Frederick W.	Minneapolis
†	Campbell, Lowell M.	Minneapolis
	Campbell, Malcolm K.	Rochester
	Campbell, Orwood J.	Minneapolis
	Campbell, Wayne L.	Waseca
	Canfield, Wayne W.	St. Peter
	Canine, James L.	South St. Paul
†	Cantwell, William F.	International Falls
	Caplan, Leslie	Minneapolis
	Card, William H.	Minneapolis
	Cardle, George E.	Brainerd
	Carey, James B., Jr.	Minneapolis
	Carlander, Lester W., Jr.	Minneapolis
	Carley, Walter A.	St. Paul
	Carlon, Donald L.	Willmar
	Carlson, Carl E.	Alexandria
	Carlson, Charles V.	Mound
	Carlson, Homer J.	Pelican Rapids
	Carlson, John V.	Westbrook
	Carlson, Lawrence	Minneapolis
	Carlson, Leonard T.	Minneapolis
	Carlson, Lloyd E.	Worthington
#	Carlson, Robert G.	Seattle, Washington
	Carlson, Russel E.	Stillwater
	Carlson, Vernon J.	Moorhead
	Carnevali, John F.	Rochester
	Caron, Robert P.	Minneapolis
	Carpenter, William B.	Rochester
	Carr, David T.	Rochester
	Carr, William J.	Minneapolis
	Carroll, John J.	Winsted
	Carryer, Haddon McC.	Rochester
	Carter, Earl T.	Rochester
	Carthey, Frank J.	New Ulm
	Carveth, Stephen W.	Rochester
	Casdorph, Herman R.	Rochester
†	Casey, John J.	Rochester
	Casey, Thomas H.	Rochester
	Caspers, Carl G.	Minneapolis
†	Catlin John J.	Buffalo
	Catlin, Theodore J.	Buffalo
	Cauble, Charles F.	Minneapolis
†	Cavanor, Frank T.	Minneapolis
	Cedarleaf, Cherry B.	Mahtomedi
	Ceder, Elmer T.	Minneapolis
	Cella, Joseph A.	Minneapolis
	Ceplecha, Stanley F.	Redwood Falls
	Cervenka, Charles F.	New Prague
	Cesnik, Robert J.	Sauk Rapids
	Chadbourn, Charles R.	St. Paul
	Chadbourn, Wayne A.	Minneapolis
†	Chaimov, Alan L.	Rochester
	Chalgren, William S.	Mankato
	Challman, S. Alan	Minneapolis
†	Chambers, Winslow C.	Blue Earth
†	Chamberlain, Jack K.	Rochester
	Chappell, Elliott R.	Stillwater
†	Chatterton, Carl C.	St. Paul
	Chermak, Francis G.	International Falls
	Chervenak, William A.	Winsted
	Chesler, Merrill D.	Minneapolis
	Child, Sherman B.	Minneapolis
	Childs, Donald S., Jr.	Rochester
	Chisholm, Tague C.	Minneapolis
	Christensen, Clarence H.	Duluth
	Christensen, Eli E.	Winona
	Christensen, Llewellyn E.	Minneapolis
	Christensen, Norman A.	Rochester
	Christenson, Carl E.	Clinton
	Christenson, Leland R.	Maple Plain
†	Christiansen, Andrew	St. Paul
	Christiansen, Harold A.	Jackson
	Christianson, Andrew	St. Paul
†	Chrzan, Donald J.	Iowa City
	Chunn, Stanley S.	Willmar
	Ciriacy, Edward W.	Ely
	Clagett, O. Theron	Rochester
	Clapp, Hubert D.	Crookston
	Clark, Edward C.	Rochester
	Clark, Elizabeth A. (Mrs. Halbert)	Duluth
	Clark, Harry B.	St. Cloud

	Clark, Henry B., Jr.	Minneapolis
	Clark, Ivan T.	Duluth
†	Clark, Lealand L.	Rochester
†	Clark, Leslie W.	Manchester, Iowa
	Clark, Malcolm D.	Minneapolis
	Clark, Robert S.	Minneapolis
	Clark, John W.	Waconia
	Clay, Lyman B.	Minneapolis
	Clifford, George W.	Alexandria
†	Clifton, Theodore A.	Hollywood, Florida
	Closuit, Frederick C.	Aitkin
#	Clowdus, Bernard F., II	Washington, D. C.
	Cochrane, Byron B.	St. Paul
	Coddon, Walter D.	St. Paul
	Cody, D. Thane	Rochester
	Coe, John I.	Minneapolis
	Cohen, Bernard A.	Minneapolis
†	Cohen, David F.	Rochester
†	Cohen, Donald M.	Rochester
	Cohen, Ellen K.	Rochester
	Cohen, Ellis N.	St. Paul
	Cohen, Ephraim B.	Minneapolis
	Cohen, Henry W.	Minneapolis
	Cohen, Maynard M.	Minneapolis
	Cohen, Sumner S.	Minneapolis
	Colby, Malcolm Y., Jr.	Rochester
	Colby, Woodard L.	St. Paul
	Cole, James S.	Minneapolis
	Cole, Wallace H.	St. Paul
	Coleman, John B.	St. Paul
	Coll, James J.	Duluth
†	Collie, Henry G.	St. Petersburg, Florida
†	Collins, Arthur N.	Duluth
†	Collins, Joseph S.	Wabasha
	Conley, Francis W.	Duluth
	Conley, Robert H	Mankato
	Connolly, Coleman J.	St. Paul
	Connolly, Daniel C.	Rochester
	Connolly, Joseph P.	South St. Paul
†	Connor, Charles E.	St. Paul
	Cook, C. Kenneth	St. Paul
	Cook, Edward N.	Rochester
	Cook, Jay M.	Staples
	Coombs, Carl H.	Cass Lake
	Cooper, Charles C.	St. Paul
	Cooper, Harold G.	Duluth
	Cooper, John P.	Minneapolis
	Cooper, Robert R.	Minneapolis
	Cooper, Talbert	Rochester
	Cope, Hershel B.	Virginia
†	Corbin, Kendall B.	Rochester
	Corn, David	Rochester
	Corne, Robert A.	Rochester
	Corniea, Albert D.	Minneapolis
#	Corr, William P.	San Francisco, California
	Correa, Dale H.	Minneapolis
	Corrigan, Cyril J.	Rochester
	Cosgriff, James A.	Olivia
	Cosgriff, James A., Jr.	Olivia
	Cottor, Robert E.	Stillwater
	Cottone, Francis J.	Rochester
	Coulter, Harold E.	Madelia
†	Countryman, Roger S.	Saratoga, California
	Courteau, Robert D.	Onamia
	Coventry, William D.	Duluth
	Coventry, Markham B.	Rochester
	Covey, Kenneth W.	Crookston
	Cowan, Donald W.	Minneapolis
	Cowan, George M.	Duluth
	Coy, Douglas J.	Grand Rapids
†	Craig, C. C.	International Falls
	Craig, David M.	St. Paul
	Craig, M. Elizabeth	Minneapolis
	Crandall, Earle E.	Rochester
†	Cranmer, Richard R.	Minneapolis
	Cranston, Robert W.	Minneapolis
	Creevy, Charles D.	Minneapolis
	Cronwell, Bernhard J.	Austin
	Crook, Rudolph L.	Duluth
	Crow, Earl R.	Ah-Gwah-Ching
	Crow, George M.	International Falls
	Crowley, James H.	St. Paul
	Crowley, Leonard V.	Minneapolis
	Crudo, Vincent D.	St. Paul
	Crum, Arthur Z.	St. Paul
	Crump, James W.	St. Paul
	Cullen, Robert M.	Wells
	Culligan, John A.	St. Paul
	Culligan, Leo C.	Minneapolis
	Culp, Clyde E.	Rochester
	Culp, Ormond S.	Rochester
	Culver, Lucian H.	St. Paul
	Cumming, E. Dale	St. Paul
	Cundy, Donald T.	Minneapolis
	Curtis, Rauen A.	Le Center
	Cushing, Richard T.	Minneapolis
†	Cushing, Robert L.	Walnut Creek, Calif.
†	Cutts, George	Minneapolis

	Daehlin, Rolf	Fergus Falls
†	D'Agostino, Anthony	Rochester
	Daggett, Donald R.	Minneapolis
	Dahl, Diane A.	Mahtomedi
	Dahl, Elmer O.	Minneapolis
	Dahl, James C.	Minneapolis
	Dahl, John A.	Minneapolis
	Dahlin, David C.	Rochester
	Dale, Les N.	Red Lake Falls
	Daly, David D.	Rochester
†	Damron, John C.	Rochester
†	Daniel, Donald H.	Minneapolis
*†	Danielson, Karl A.	Litchfield
	Danielson, Lennox	Litchfield
	Danyluk, Michael	Minneapolis
	Dargay, Cyril P.	Minneapolis
	Daugherty, Guy W.	Rochester
	David, Reuben	Hopkins
	Davidson, Allan D.	Caledonia
#	Davidson, Paul	Oahu, Hawaii
	Davidson, William D.	St. Cloud
	Davies, Donald W.	Eveleth
	Davis, Arthur B., Jr.	St. Cloud
†	Davis, Austin C.	Pampano Beach, Florida
	Davis, Edward V.	St. Paul
	Davis, Eunice A.	Minneapolis
	Davis, George D.	Rochester
	Davis, Jay C.	Minneapolis
	Davis, Lloyd T.	Wadena
	Davis, Luther F.	Wadena
	Davis, Raymond D.	Waseca
	Davis, William I.	Moose Lake
	Dawson, James R.	St. Paul
	Dawson, Lorin D.	Worthington
	Dearing, William H., Jr.	Rochester
	Deason, Keith B.	Chisago
	Decker, Charles H.	St. Paul
	Decker, David G.	Rochester
	Degallier, Daniel	Winona
†	Degnan, Thomas J.	Rochester
	Dehnel, Luther L.	Minneapolis
†	de la Vega, Daniel J.	Rochester
	Delano, James G.	Rochester
	Delmore, John L., Jr.	Roseau
	del Plaine, Carlos W.	Minneapolis
	DeMarais, Lloyd C.	Hibbing
	Demo, Robert A.	Albert Lea
	Derauf, Benjamin I.	St. Paul
	Derauf, Donald E.	St. Paul
	Deters, Donald C.	St. Paul
	Deutsch, Robert J.	Duluth
	Devereaux, Thomas J.	Wayzata
	Devine, Kenneth D.	Rochester
†	DeWall, Richard	Minneapolis
	DeWeerd, James H.	Rochester
	Deweese, Wilford J.	Bemidji
	deWerd, Robert W.	Owatonna
	Dewey, Donald H.	Owatonna
†	Dickens, W. Norman	Rochester
	Dickman, Roy W.	Minneapolis
	Dickson, Franklin H., Jr.	Proctor
†	Dickson, Harrison M.	Rochester
	Diefenbach, Eugene J.	Minneapolis
	Diehl, Harold S.	New York City, N.Y.
	Dierker, Heinrich A.	Minneapolis
	Diessner, Ardell W.	Redwood Falls
	Diessner, Henry D.	Minneapolis
†	Dietrich, Robert A.	Rochester
	Dille, Donald E.	Litchfield
	Dillenburg, C. J.	Little Falls
†	Dion, Frances R.	Rochester
	Divertie, Matthew B.	Rochester
	Dixon, Claude F.	Rochester
	Doan, Robert E.	Wayzatta
	Dobler, Manfred G.	Ely
	Dobson, Mervin W.	Mankato
	Dockerty, Malcolm B.	Rochester
	Docksey, John W.	Willmar
	Dodds, Joseph J.	Rochester
	Dodds, William C.	Detroit Lakes
	Dodson, Albertus F.	Brainerd
	Doebler, Myron I.	Bagley
	Doerr, Gerhard M.	St. Paul
	Doherty, Elmer M.	New Prague
	Dokken, James H.	Windom
	Doman, Victor W.	Lakefield
	Dombrowski, Edmund T.	Rochester
	Doms, Vernon A.	Elbow Lake
	Donaldson, Charles S.	St. Cloud
	Donatelle, Edward P.	Minneapolis
	Donoghue, Francis E.	Rochester
	Donovan, Daniel L.	Albert Lea
	Dordal, John	Sacred Heart
	Dorge, Richard I.	Minneapolis
	Dorsey, George C., Jr.	Minneapolis
	Doscherholmen, Alfred	Minneapolis
	Douglass, Bruce E.	Rochester
	Douglass, Jesse E.	Cannon Falls
	Doxey, Gilbert L.	Minneapolis
	Doyle, James R.	Rochester
	Doyle, Lawrence O.	Minneapolis
	Drake, Carl B.	St. Paul
†	Drake, Charles R.	Minneapolis
	Dredge, Thomas E., Jr.	Minneapolis
	Drexler, Charles J.	Litchfield
	Drexler, George W.	Blue Earth
	Drill, Herman E.	Hopkins
†	Dripps, Della G.	Oronoco
†	DuBois, Julian F.	Sauk Centre
	Duff, Edwin R.	Minneapolis
	Dummer, Donald J.	New Brighton
†	Dumont, Guy	Rochester
	Duncan, James W.	Moorhead
	Dunlap, Earl H.	Minneapolis
	Dunn, Robert C.	St. Paul
	Dunstan, Paul L.	Willmar
	Dupont, Joseph A.	Excelsior
	Duryea, Marbry	Minneapolis
	Duryea, Willis M.	Minneapolis
	Duryea, Willis M., Jr.	Minneapolis
	DuShane, James W.	Rochester
	Duthoy, E. J.	Park Rapids
	Dvorak, Benjamin A.	Minneapolis
	Dwan, Paul F.	Minneapolis
	Dworsky, Samuel D.	Minneapolis
	Dwyer, John J.	Duluth
†	Dyck, Peter J.	Rochester
	Dyer, John Allen	Rochester
	Dyrdal, Paul J.	St. Paul
	Dysart, Donnar W.	Rochester
	Dysterheft, Adolf F.	Gaylord

	Earl, George A.	St. Paul
	Earl, John R.	St. Paul
	Eberley, Tobe S.	Benson
†	Eberlin, Edward A.	Glenwood
	Eckdale, John E.	Marshall
	Eckman, Philip F.	Duluth
	Eckman, Ralph J.	Duluth
	Eddy, Richard L.	Alexandria
	Eder, Walter P.	Minneapolis
	Edwards, Jesse E.	St. Paul
	Edwards, Joseph W.	St. Paul
	Edwards, J. Willard	St. Paul
	Edwards, Lloyd G.	St. Paul
	Edwards, Robert V.	Crookston
	Edwards, Thomas J.	St. Paul
	Eelkema, Herman H.	St. Paul
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	Egge, Sanford G.	Albert Lea
	Eginton, Charles T.	St. Paul
	Ehrenberg, Claude J.	Minneapolis
	Ehrlich, S. Paul	Minneapolis
	Eich, Matthew A.	Minneapolis
	Eichhorn, Edmund P., Jr.	Minneapolis
	Eide, O. A.	Hancock
	Eisenman, Walter	Hibbing
	Eisenstadt, David H.	Minneapolis
	Eisenstadt William S.	Minneapolis
	Eitel, George D.	Minneapolis
†	Ekblad, John W.	Rock Island, Illinois
	Eklund, Carl D.	Duluth
	Ekstrand, Leroy M.	Wabasha
	Eli, Earl W.	Minneapolis
	Elias, Frank J.	Duluth
	Elkins, Earl C.	Rochester
	Ellertson, Leonard M.	Albert Lea
	Ellinger, Albert J.	Willmar
	Elliott, Harold J.	Hayfield
	Ellis, Earl W.	Elgin
	Ellis, F. Henry	Rochester
†	Ellison, David E.	Minneapolis
	Ellison, Ellis	Minneapolis
	Ellison, Evan S.	Minneapolis
	Ellison, Frank E.	Monticello
	Emanuel, Karl W.	Duluth
	Emerson, Edward C.	St. Paul
	Emerson, Edwin E.	Osakis
	Emmett, John L.	Rochester
	Emmons, Robert W.	St. Paul
	Endress, Edward K.	St. Paul
	Engberg, Edward J.	Faribault
†	Engel, Andrew G.	Rochester
	Engel, Joseph P.	Minneapolis
	Engel, Stephen	Rochester
	Engelhart, Peter C.	Minneapolis
	Englestad, Wendell P.	Virginia
	Engler, Robert S.	Rochester
	Engstrand, Oscar J.	Minneapolis
	Engstrom, George	St. Peter
	Engstrom, Robert B.	Mankato
	Enroth, Oscar E.	St. Paul
	Engwall, Richard	Ivanhoe
	Eppard, Raymond M.	Cloquet
	Erdal, Ove A.	Albert Lea
	Erich, John B.	Rochester
	Erickson, Alvin O.	Long Prairie
	Erickson, Clifford O.	Minneapolis
	Erickson, Donald J.	Rochester
*	Erickson, George P.	Hibbing
	Erickson, Laurence F.	Minneapolis
	Erickson, Myron E.	Minneapolis
	Erickson, Reuben F.	Minneapolis
	Erickson, Vernon D.	Grand Rapids
†	Ericson, Swan	Los Angeles, California
	Erlanson, A. Cornell	Hibbing
†	Ernest, George C. H.	Lakeland, Florida
	Ersfeld, Murray P.	St. Paul

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† Eshelby, E. C. .... St. Paul
Estrem, Ralph L. .... Fergus Falls
Estrem, Robert D. .... Fergus Falls
Ettinger, Milton G. .... Minneapolis
Etzwiler, Donnell D. .... Minneapolis
† Eusterman, George B. .... Rochester
Eustermann, John J. .... Mankato
Evans, Edward T. .... Minneapolis
Evans, Leslie M. .... Sauk Rapids
Evans, Robert D. .... Minneapolis
† Evarts, Arrah B. .... Rochester
Evensta, John B. .... Grand Rapids
Ewens, George B. .... Virginia

Faber, John E. .... Rochester
† Fahr, George E. .... Minneapolis
Fairbairn, John R. .... Rochester
Falk, Abraham .... St. Paul
Fallon, Virgil T. .... Dawson
Falls, John L. .... Red Wing
Fansler, Walter A. .... Minneapolis
Farkas, John V. .... St. Paul
Farmer, John L., Jr. .... Rochester
Fasbender, Herman T. .... Hastings
† Fatum, Paul J. .... Rochester
Faulconer, Albert Jr. .... Rochester
Fawcett, Arthur M. .... Renville
Fawcett, Keith R. .... Duluth
† Fedor, Robert D. .... Litchfield
Fee, John G. .... St. Paul
Feeney, John M. .... Minneapolis
Feigal, David W. .... Wayzata
Feigal, William M. .... Fairmont
Feinberg, Philip .... Minneapolis
Feinberg, Samuel B. .... Minneapolis
Feinstein, Julius Y. .... Minneapolis
Felder, Davitt A. .... St. Paul
Feldmann, Floyd M. .... New York
Felion Aruthr J. .... St. Paul
Fellows, Manley F. .... Duluth
Fenger, Ejvind P. K. .... Oak Terrace
Ferguson, Richard H. .... Rochester
Ferguson, William C. .... Walnut Grove
Ferrand, Paula T. .... Moose Lake
Ferrell, Clarence R. .... Grand Rapids
Ferris, Deward O. .... Rochester
Fesenmaier, Otto B. .... New Ulm
Fesler, Harold H. .... St. Paul
Fetzek, Albert G. .... Minneapolis
Feuling, John C. .... Duluth
Field, Anthony H. .... Farmington
Field, Charles W. .... Minneapolis
Fifer, Ellen Z. .... Minneapolis
Fifer, William R. .... Minneapolis
Fifield, Malcolm M. .... Duluth
† Figi, Frederick A. .... Rochester
Fingerman, David L. .... Minneapolis
Fink, Daniel L. .... St. Paul
Fink, Leo W. .... Minneapolis
Fink, Robert J. .... Minneapolis
Fink, Walter H. .... Minneapolis
Finkelnburg, William O. .... Winona
Fisch, Herbert M. .... Austin
Fischer, John R. .... Blooming Prairie
Fischer, Mario M. .... Duluth
Fischer, Robert F. .... St. Paul
Fischer, Dan W. .... St. Paul
Fisher, Don H. .... Minneapolis
Fisher, Isadore I. .... Minneapolis
Fisketti, Henry .... Duluth
† Fjeldstad, C. Alford .... Minneapolis
Flannagan, Harold F. .... St. Paul
Flanagan, Leonard G. .... Austin
Flanary, Lawrence M. .... Chisholm
Flancher Leon H. .... Crookston
Flannery, Hubert F. .... St. Paul
Flatt, John R. .... Wabasha
Fleeson, William H. .... Minneapolis
Fleming, Dean S. .... Hopkins
Fliehr, Richard R. .... Minneapolis
Flinn, James B. .... Redwood Falls
† Flinn, Thomas E. .... Remer
Floersch, Adrian J. .... Owatonna
Flom, Reynold P. .... St. Paul
Flom, Robert S. .... St. Paul
† Florine, Martin C. .... Canal Zone, Panama
Fluegel, John O. .... Rochester
Flynn, Bernard F. .... Hibbing
Flynn, Louis L., Jr. .... St. Paul
Flynn, Robert A. .... St. Paul
Foderick, Peter P. .... Hallock
† Fogarty, Charles W. .... St. Paul
Fogarty, Charles W., Jr. .... St. Paul
Fogelberg, Emil J. .... St. Paul
Foker, Leslie W. .... Minneapolis
† Foley, Frederic E. B. .... St. Paul
Folsom, Louis B. .... Minneapolis
† Fons, Anthony L., III .... Rochester
Ford, Burton C. .... Marshall
Ford, William H. .... Minneapolis
Forsythe, James R. .... St. Paul
Fortier, George M. A. .... Little Falls
Fortier, Rene G. .... Mankato
Fortman, Albert H., Jr. .... Crookston
Foss, Edward L. .... Rochester
Foster, Orley W. .... Minneapolis
Foulk, William T., Jr. .... Rochester
† Fowler, L. Haynes .... Newport Beach, Calif.
† Fox, Donald P. .... Tanganyika, East Africa
Fox, James R. .... Minneapolis
Fox, LeRoy J. .... St. Paul
Fox, Nelson M., Jr. .... Rochester
Francis, David W. .... Morristown
Francis, Robert L. .... Rochester
Frane, Donald B. .... Minneapolis
Franklin, Gordon W. .... Northome
Fredericks, George M. .... Minneapolis
Frederickson, Alice C. .... Willmar
Freeman, Charles D., Jr. .... St. Paul
Freeman, Craig W. .... Minneapolis
Freeman, Donald W. .... St. Louis Park
† Freeman, John P. .... Glenville
French, Bayard T. .... Hibbing
French, Lyle A. .... Minneapolis
Frethem, Allen A. .... Rochester
Frey, Richard J. .... Minneapolis
Friberg, Joseph B. .... Minneapolis
Fricke, Robert E. .... Rochester
Fried, Louis A. .... Minneapolis
Friedell, Aaron .... Minneapolis
Friedell, George .... St. Louis Park
Friedlieb, Oskar P. .... Virginia
Friedman, Harry S. .... Minneapolis
Friend, Charles A. .... Minneapolis
Friesen, Gerhard .... Rochester
† Frink, Richard J. .... Rochester
Frischknecht, Albert .... Rochester
Fritsche, Albert .... New Ulm
Fritsche, Carl J. .... New Ulm
Fritsche, Theodore R. .... New Ulm
Fritz, Wallace L. .... St. Paul
Froats, Charles W. .... St. Paul
Frost, John B. .... Minneapolis
Frost, Russell H. .... St. Paul
Frykman, Howard M. .... Minneapolis
† Fryling, Vera B. .... San Francisco, California
Frys, Russell N. .... Minneapolis
† Fuller, Alice H. .... Minneapolis
Fuller, Benjamin F. .... St. Paul
Fuller, Josiah .... Duluth
Funke, Joyce L. .... St. Paul
Furlow, William L. .... Faribault
Furman, L. Christine .... Minneapolis
Furr, Leo .... Bird Island
Fusaro, Ramon M. .... Minneapolis

Gaard, Richard C. .... Minneapolis
† Gabbert, Clayton R. .... Rochester
Gaebe, Milton B. .... Clara City
Gaertner, Frank M. J., Jr. .... St. Paul
Gaida, Jos. B. .... St. Cloud
Gailitis, Veronika M. .... Cambridge
† Galbraith, Richard F. .... Rochester
Galejs, Aina .... Minneapolis
† Gallagher, Bernard J. .... Waseca
† Gallaway, Jackson R. .... Rochester
Gallett, Lester E. .... Minneapolis
Galligan, John J. .... St. Paul
† Galligan, Margaret M. D. .... Minneapolis
† Gambill, Carl M. .... Rochester
Gambill, Earl E. .... Rochester
Gamble. Elbert J. .... Albert Lea
Gammell, John H. .... Minneapolis
Gannon, Paul G. .... Rochester
Garmella, Joseph J. .... Minneapolis
Garbrecht, Arthur W. .... St. Paul
Gardner, Jack K. .... Fairmont
Gardner, Victor H., Sr. .... Fairmont
Gardner, Walter P. .... St. Paul
† Garrett, J. Marshall .... Rochester
Garrow, Douglas M. .... St. Paul
Garske, George L. .... Minneapolis
Garten, Joseph L. .... Minneapolis
Garvey, James T. .... Minneapolis
Gastineau, Clifford F. .... Rochester
Gatzke, Laurence D. .... Rochester
Gault, N. L., Jr., APO, San Francisco, Cal.
† Gault, Sarah J. APO, San Francisco, Cal.
Gaviser, David .... Minneapolis
† Gedge, Stafford W. .... Rochester
Gehlen, Joseph N. .... St. Paul
Geib, Marvin J. .... Fargo, North Dakota
Geiser, Peter M. .... Alexandria
Geller, Joseph .... Minneapolis
George, Vane P., Jr. .... Minneapolis
Geraci, Joseph E. .... Rochester
Gerend, Thomas J. .... Virginia
Geurs, Benjamin R. .... Mankato
Ghostley, Mary C. .... Santa Anna, California
Gibbs, Edward C. .... St. Paul
Gibbs, Robert W. .... Minneapolis
Giebenhain, John N. .... Minneapolis
Giere Joseph C. .... Minneapolis
Giere, Richard W. .... Minneapolis
Giere, Silas W. .... Benson
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Gifford, R. W., Jr. .... Rochester
Gilbert, Maurice G. .... Minneapolis
Gildersleeve, Robert .... Watertown
Gilbertsen, A. Sigrid .... Minneapolis
Gilbertsen, Victor A. .... Minneapolis
Giles, William F. .... Rochester
Gill, Charles R. .... Rochester
Gill, Theodore .... Albert Lea
Gillespie, Delmar R. .... St. Paul
Gillespie, Malcolm G. .... Duluth
Gilman, Lloyd C. .... Willmar
Gilsdorf, Donald A. .... St. Paul
Gingold, Benjamin A. .... Minneapolis
Gislason, Paul H. .... Mankato
Gislason, Solveig T. .... St. Peter
Gjerde, William P. .... Lake City
Glaeser, John H. .... Minneapolis
Gleason, Wallace A. .... St. Paul
Glick, Dallas D. .... Rochester
Gobel, Frederick L. .... Duluth
Goblirsch, Andrew P. .... Sleepy Eye
Godfrey H. Wilson .... Minneapolis
Goehrs, Gilman H. .... St. Cloud
† Goehrs, Henry W. .... St. Cloud
† Goethals, Paul L. .... Rochester
Gold, David .... Minneapolis
Goldberg, Isadore M. .... Minneapolis
Goldberg, Marvin E. .... Minneapolis
Goldish, Daniel R. .... Duluth
Goldish, Robert J. .... Duluth
Goldman, Theodore I. .... Minneapolis
Goldner, Meyer Z. .... Minneapolis
Goldschmidt, Volker .... Duluth
Goldsmith, Joseph W. .... St. Paul
Goldstein, Alan .... Chanhassen
Goldstein, Norman P. .... Rochester
† Goldston, Anne Smith .... Rochester
† Goldston, Edgar C. .... Rochester
† Goltz, Edward V. .... St. Paul
Goltz, Robert W. .... Minneapolis
Gocd, C. Allen, Jr. .... Rochester
Good, Gary .... Minneapolis
Good, Hoff D. .... Minneapolis
Good, Roy H. .... Northfield
Goodchild, William R. .... Minneapolis
Goodman, Charles E. .... Virginia
Goodman, Ernest .... St. Paul
Goodnow, William H. .... Duluth
† Goodwin, Andrew .... Rochester
Gorchynski, Orest .... Milaca
Gordon, Alan L. .... Rochester
Gordon, John R. .... Minneapolis
Gordon, Philip E. .... Minneapolis
Gordon, Sewell S. .... St. Louis Park
Gould, Allan B., Jr. .... Rochester
Gowan, Lawrence R. .... Duluth
† Graham, Archibald W. .... Chisholm
Graham, Asa B. .... Faribault
Grahek, Jack P. .... Ely
Granberry, W. Malcolm .... Rochester
Granquist, Richard D. .... Duluth
* Grant, Hendrie W. .... St. Paul
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Grant, Suzanne .... Minneapolis
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Graudins, Gunars .... Rochester
† Graves, Richard B. .... Red Wing
Gray, Edward F. .... White Bear
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Gray, Royal C. .... Minneapolis
† Gregg, James A. .... Rochester
Green, Clayton R. .... Excelsior
Green, Paul A. .... Rochester
Green, Robert A. .... St. Louis Park
Greenberg, Albert J. .... Minneapolis
† Greenberg, Eugene .... Rochester
Greene, Daniel E. .... Thief River Falls
Greene, Laurence F. .... Rochester
Greene, Leonard H. .... Minneapolis
Greenfield, William T. .... Cokato
Greenwald, Charles M. .... St. Cloud
† Gregg, James A. .... Rochester
¶ Greishiemer, Ethel M. .... Philadelphia, Pa.
Gridley, John W. .... Arlington
Griebie, Grant L. .... Brownton
Griffin, John W., Jr. .... Bemidji
Griffin, Richard P. .... Benson
Grimes, Burton P. .... St. Peter
Grimes, Marian .... Minneapolis
Grimes, Paul T. .... Park Rapids
Grimmell, Francis J. .... Minneapolis
Grindlay, John H. .... Rochester
Grismer, Jerome T. .... Minneapolis
Grohs, William H. .... Duluth
Gronquist, Y. K. J. .... Cloquet
Gronvall, Paul R. .... Minneapolis
Groschupf, Richard P. .... Bemidji
Groschupf, T. P. .... Bemidji
Grose, Frederick N. .... Clarissa

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	Guilfoile, Pierre J.	Delano
	Guldseth, Gustav J.	Hendricks
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	Gullickson, Glenn, Jr.	Minneapolis
	Gunlaugson, Frederick G.	Minneapolis
	Gustafson, Paul O.	Minneapolis
	Gustafson, Robert W.	Fairmont
	Gustason, Harold T.	Minneapolis
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	Guy, Jack A.	New London
	Haas, Jack F.	Northfield
	Haase, Donald D.	Silver Bay
	Haavik, John E.	Duluth
	Habein, Harold C.	Wabasha
	Haberer, Helen R.	Minneapolis
	Haberle, Charles A.	Minneapolis
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	Haes, Julius E.	St. Peter
	Hagberg, Norman L.	Montevideo
	Hagedorn, Albert B.	Rochester
	Hagen, John D.	Austin
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†	Hagen, Olaf J.	Moorhead
	Hagen, Paul S.	St. Paul
	Hagen, Wayne S.	Minneapolis
*	Haggard, George D.	Minneapolis
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	Hakanson, Erick Y.	St. Paul
	Halbert, John J.	Duluth
	Halenbeck, Philip L.	St. Cloud
	Hall, Barnard	St. Paul
	Hall, Harry B.	Minneapolis
	Hall, Wendell H.	Minneapolis
	Hall, William E.	St. Paul
	Hallberg, Olav E.	Rochester
†	Hallenbeck, Dorr F.	Rochester
	Hallenbeck, George A.	Rochester
	Hallgren, Roger B.	Belle Plaine
	Hallin, Roger P.	Worthington
	Halloran, Walter H.	Jackson
	Halme, William B.	Wadena
	Halper, Bernard	Hibbing
	Halpern, David J	Brewster
	Halpin, Joseph E.	Rush City
	Halverson, Donald E.	Winnebago
†	Halverson, Kermit J.	Minneapolis
	Halverson, William G.	Madelia
	Halvorsen, Daniel K.	Owatonna
	Halvorsen, David	Northfield
	Halvorson, Harold C.	Luverne
	Halvorson, James W.	Zumbrota
	Hambidge, Gove, Jr.	Minneapolis
	Hamel, Joseph I.	Minneapolis
	Hamilton, Samuel L.	Red Wing
#	Hamilton, Warren W., Jr.	St. Albans, N. Y.
	Hamlon, John S.	Fergus Falls
	Hammar, Lawrence M.	Mankato
	Hammerstad, Lynn M.	Minneapolis
	Hammerston, Robert N.	Minneapolis
	Hammes, Ernest M.	St. Paul
	Hammes, Ernest M., Jr.	St. Paul
†	Handler, Seymour	Minneapolis
†*	Haney, Claude L.	Duluth
	Hankerson, Robert G.	Minnesota Lake
	Hanlon, David G.	Rochester
	Hannah, Hewitt B.	Minneapolis
	Hannon, Donald W.	St. Paul
	Hanover, Ralph D.	International Falls
	Hansen, Cyrus O.	Minneapolis
	Hansen, Erling W.	Minneapolis
	Hansen, Milo L.	Little Falls
	Hansen, Olga S.	Minneapolis
	Hansen, Robert E.	Hibbing
	Hansen, Rollin M.	Minneapolis
	Hansen, Theodore M.	Albert Lea
	Hanske, Edward A.	Minneapolis
	Hanson, Ernest O.	Cloquet
	Hanson, Everett C.	New York Mills
	Hanson, Harlow J.	Minneapolis
	Hanson, Harold B.	Minneapolis
	Hanson, Harold W.	Minneapolis
†	Hanson, Henry V.	St. Paul
	Hanson, John W.	Northfield
	Hanson, Lewis	Frost
	Hanson, Malcolm B.	Minneapolis
	Hanson, Mark C. L.	Minneapolis
	Hanson, Mildred S.	Minneapolis
	Hanson, Norbert O.	Rochester
	Hanson, William A. H.	Minneapolis
	Hanson, William B.	Minneapolis
	Happe, Lawrence J.	Minneapolis
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	Hargraves, Malcolm	Rochester
	Harmon, Gaius E.	St. Paul
†	Harrington, Stuart W.	Rochester
	Harrington, Vernon A., Jr.	Duluth
	Harris, John E.	Minneapolis
	Harris, Leon D.	Minneapolis
	Harris, Lloyd E.	Rochester
†	Harrison, Carlos E.	Rochester
	Harrison, Edgar G., Jr.	Rochester
	Harrison, Percy W.	Worthington
	Harrison, William C.	Minneapolis
	Hart, William E.	Monticello
	Hartfiel, William F.	St. Paul
	Hartig, Marjorie	St. Paul
	Hartjen, Jason K.	Bemidji
	Hartman, Evelyn E.	Minneapolis
	Hartnagel, Grant F.	Red Wing
	Hartridge, Virginia B.	Rochester
	Hartung, Elmer H.	Claremont
	Hartwich, Roger F.	Winona
	Hartwig, John A.	Minneapolis
	Hartzell, John M.	Rochester
	Hass, Frederick M.	Minneapolis
	Hastings, DeForest R.	Minneapolis
	Hastings, Donald W.	Minneapolis
†	Hatch, Walter E.	Duluth
	Hauge, Erling T.	Minneapolis
	Haugen, George W.	Minneapolis
	Haugen, John A.	Minneapolis
	Hauser, Donald C.	Minneapolis
†	Hauser, George W.	Seattle, Washington
#	Hauser, Harris M.	San Antonio, Texas
	Hauser, Victor P.	St. Paul
†	Hauser, Walter H.	Rochester
	Havel, Robert J.	Minneapolis
	Haven, Walter K.	Minneapolis
†	Havens, Fred Z.	Riverside, California
†	Havens, John G. W.	Austin
	Hawkinson, Raymond P.	Minneapolis
	Hawley, George M. B., II	Red Wing
	Hay, Lyle J.	Minneapolis
	Hayes, Albert F.	St. Paul
*†	Hayes, James M.	San Diego, California
	Hayes, Alvin B.	Rochester
	Hays, Albert T.	Minneapolis
	Haywa, E. William	Minneapolis
	Head, Douglas P.	Minneapolis
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	Hebbel, Robert	Minneapolis
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	Heck, Frank J.	Rochester
	Heck, William W.	St. Paul
	Heckman, Donald C.	Owatonna
	Hedemark, Homer H.	Ortonville
	Hedemark, Truman A.	Ortonville
	Hedenstrom, Charles W.	St. Paul
	Hedenstrom, Frank G.	St. Paul
†	Hedenstrom, Paul H.	White Bear Lake
	Hedenstrom, Philip C.	Marshall
	Hedlund, Charles J.	St. Paul
	Hedrick, William L.	Minneapolis
	Heegaard, William G.	Alexandria
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	Heiam, William C.	Cook
†	Heiberg, Emmett A	Fergus Falls
	Heiberg, Olaf M.	Worthington
	Heid, James K.	Little Falls
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	Heilig, William R.	St. Paul
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	Heinz, Ivy B.	Shakopee
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	Heinzerling, Carl R.	Chaska
	Heise, Herbert vR	Winona
	Heise, Paul vR	Winona
	Heise, Philip vR	Winona
	Heller, Edgar E.	Mankato
	Helm, Walter J.	Rochester
	Helseth, Hovald K.	Fergus Falls
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	Hempel, Dean J.	Minneapolis
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	Henderson, John W.	Rochester
	Henderson, Lowell L.	Rochester
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	Hengstler, William H.	St. Paul
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	Henry, Joseph E.	Milaca
	Henry, Kenneth G.	Owatonna
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†	Hewitt Richard M.	Rochester
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	Hildebrandt, Walter C.	Minneapolis
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	Hilgedick, William R.	Two Harbors
	Hilger, Jerome A.	St. Paul
	Hilger, Laurence D.	St. Paul
	Hilgermann, George O.	Minneapolis
	Hilker, Marcus D.	St. Paul
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	Hill, Elmer M.	Minneapolis
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	Hill, Richard W.	Rochester
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	Hinz, Walter E.	Willmar
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	Hodgson, Jane E.	St. Paul
	Hodgson, John R.	Rochester
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	Hoeper, Philip G.	Mankato
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	Hoffbauer, Frederick W.	Minneapolis
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†	Holcomb, O. William	St. Paul
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	Hopkins, James W.	Rochester
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	Horns, Richard C.	Minneapolis
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	Hovde, Rolf	Winthrop
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Ivy, Horace K. .... Rochester

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Jackson, Richard L. .... Minneapolis
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James, John W. .... St. Paul
Janda, George W., Jr. .... Minneapolis
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Jarvis, Charles W. .... St. Paul
Jarvis, Marilyn A. .... St. Paul
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Johnson, Carl E. .... Rochester
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Johnson, Douglas L. .... Little Falls
Johnson, Edward A. .... Minneapolis

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† Johnson, James A. .... Minneapolis
Johnson, John W. .... Minneapolis
Johnson, Karl E. .... Duluth
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Johnson, Malcolm R. .... Minneapolis
Johnson, Marvin W. .... Dassel
Johnson, Morris B. .... St. Paul
Johnson, Norman P. .... Minneapolis
Johnson, Norman Paul .... Minneapolis
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Johnson, Olga H. .... Moorhead
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Johnson, Reinald G. .... Minneapolis
† Johnson, Reuben A. .... Minneapolis
Johnson, Richard J. .... St. Paul
Johnson, Richard S. .... Minneapolis
Johnson, Robert E. .... Minneapolis
Johnson, Robert H. .... Bayport
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Johnson, Victor .... Rochester
Johnson, Vilhelm M. .... Dawson
† Johnson, Walter K. .... Rochester
† Johnson, Walter L. .... Rochester
Johnson, Wendell A. .... Rochester
Johnson, William E. .... Morgan
Johnson, William S. .... Rochester
Johnson, Youbert T. .... Minneapolis
Johnsrud, Luverne W. .... Hibbing
Johnston, H. Wayne .... Virginia
Johnston, Leonard F. .... Winona
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Jones, David G. .... Minneapolis
† Jones, E. Mendelssohn .... St. Paul
† Jones, Herbert W., Jr. .... Minneapolis
† Jones, Hurley D. .... Rochester
Jones, Orville H. .... Mankato
Jones, Richard H. .... Minneapolis
† Jones, Richard N. .... St. Cloud
Jordan, Donald V. .... Minneapolis
† Jordan, Kathleen B. .... Granite Falls
Jordan, Lewis S. .... Granite Falls
Jorgenson, Edward O. .... Duluth
Joseph, Arnold H. .... St. Paul
Josewski, Raymond J. .... Stillwater
Joyce, George L. .... Rochester
† Joyce, John W. .... Rochester
Judd, Allen S. .... Minneapolis
Judd, Edward S. .... Rochester
Judd, Walter H. .... Washington D. C.
Juergens, Herman M. .... Belle Plaine
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Juergens, Manley F. .... Stillwater
Juers, Edward H. .... Red Wing
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Juntunen, Roy R. .... Duluth
Jurdy Mitchell J. .... Minneapolis
Just, Herman J. .... Hastings

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† Kabrick, Ola A. .... St. Peter
Kaese, Werner E. .... Rochester
Kadesky, Harold B. .... Minneapolis
Kaiser, Bernard D. .... Belle Plaine
Kaiser, Milton L. .... New Ulm
Kalin, Oscar T. .... Minneapolis
Kallestad, Leonard L. .... Wayzata
Kamman, Gordon R. .... St. Paul
Kane, Dennis J. .... St. Paul
Kanne, Earl R. .... Brainerd
Kantar, Bruce L. .... Minneapolis
Kaplan, Carl .... Rochester
Kaplan, David H. .... St. Paul
Kaplan, Harold A. .... Minneapolis
Kaplan, J. Jacob .... Minneapolis
Kapsner, Alfred T. .... Princeton
Karges, Laurel E. .... Grand Rapids
Karish, Louis J. .... Coleraine
Karleen, Bernard N. .... Jackson
Karleen. Conrad I. .... Minneapolis
Karlen, Markle .... Minneapolis
Karn, Jacob F. .... Ortonville
Karon, Everett H. .... St. Paul
Karon, Irvine M. .... St. Paul
Kasper, Eugene M. .... St. Paul
Kasper, Robert E. .... Minneapolis
Kath, Reinhard H. .... Arlington
Katz, Louis J. .... Long Beach, California
Kaufman, Edward J. .... Appleton
Kaufman, Herschel J. .... Minneapolis
Kaufman, Walter B. .... Appleton
Kaufman, William C. .... Appleton
Kaye, Ronald L. .... Victorville, California
Kearns, Thomas P. .... Rochester
Keating, Francis R., Jr. .... Rochester
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Keefe, Rolland E. .... St. Paul

Keil, Marcus A. .... Albert Lea
Keith, Haddow Mc. .... Rochester
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Keith, Paul J. .... Milaca
Keithahn, Elmer E. .... Sleepy Eye
Kelby, Gjert, M. .... Minneapolis
Kelley, Roger E. .... Crosby
† Kelley, Walter M. .... Madison, Wis.
Kelly, Albert C. .... St. Paul
Kelly, Charles F. .... Minneapolis
Kelly, Edward H. .... St. Paul
Kelly, James H. .... St. Cloud
Kelly, John F. .... Cold Spring
Kelly, John P. .... Minneapolis
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Kelly, Robert T. .... Grand Rapids
† Kelsey, Carleton G. .... St. Paul
Kelsey, Chauncey M. .... St. Paul
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Kennefick, Emmett V. .... St. Paul
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Kennedy, George L. .... Faribault
† Kennedy, Jane F. .... Minneapolis
Kennedy, Roger L. J. .... Rochester
Kennedy, W. Charles .... Rochester
Kenyon, Thomas J. .... St. Paul
Kerkhof, Arthur C. .... Minneapolis
Kernohan, James W. .... Rochester
† Kesting, Herman .... St. Paul
† Kettering, Ronald F. .... Rochester
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Keyes, John D. .... Winona
Keyes, Robert W. .... Pipestone
Kiely, Joseph M. .... Rochester
Kierland, Robert R. .... Rochester
Kiesler, Frank Jr. .... Minneapolis
Kilbride, Edwin A. .... Worthington
Kim, Mark K. .... Minneapolis
Kim, Robert .... Rochester
Kimmel, George C.., Jr. .... Minneapolis
Kincaid, Owings W. .... Rochester
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King, Frances W. .... Oak Terrace
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Kinkade, Byron R. .... Ada
Kinsella, Thomas J. .... Minneapolis
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Kiolbasa, Edward B. .... Stillwater
Kippen, Neil .... Breckenridge
Kirby, Thomas J., Jr. .... Rochester
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Klein, William A. .... Duluth
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Koenig, Robert P. .... St. Cloud
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Knutson, Lewis A. .... Spring Grove
Knutson, Robert C. .... St. Paul
Kodres, Nina .... St. Paul
Koelsche, Giles A. .... Rochester
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* Koepcke, Gerald M. .... Minneapolis
Kogl, Richard C. .... Edina
Kohlbry, Carl O. .... Duluth
Kolhase, Robert E. .... Minneapolis
Kohn, Eleanor M. .... Rochester
Kolars, Charles P. .... Minneapolis
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† Koller, Louis R. .... Minneapolis
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Kooda, Jennings C. .... Morris
Koons, W. R. .... Mahnomen
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Kosiak, William .... Two Harbors
Kostick, William R. .... Fertile
Kotchevar, Frank R. .... Eveleth
Kottke, Frederic J. .... Minneapolis

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	Koucky, Rudolph W.	Minneapolis
	Kovack, Freeman D.	Minneapolis
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	Krafft, Walter E.	Minneapolis
	Kragh, Lyle V.	Minneapolis
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	Kremen, Arnold J.	Minneapolis
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	Krieser, Albert E.	Minneapolis
	Krock, Felix A.	Rochester
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	Kusske, Douglas R.	St. Paul
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	Kvale, Walter F.	Rochester
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	L'Esperance, Bernard F.	Duluth
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	Lee, Norman J.	Tracy
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	Leppo, N. Erkki A.	Duluth
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	Lerner, A. Ross	Richmond, Virginia
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	Lester, Malcolm J., Jr.	Truman
	Lester, Richard G.	Minneapolis
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	Lewis, Joyce S., Jr.	St. Paul
	Lick, Charles L.	St. Paul
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	Lick, William J., Jr.	St. Paul
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	Liffrig, William W.	Red Wing
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	Lillie, John C.	Rochester
	Lima, Ludvig R., Jr.	Montevideo
	Lindahl, Merlyn J.	Sherburn
	Lindell, Robert E.	St. Paul
	Lindberg, Alfred L.	Wheaton
	Lindberg, Arthur N.	Minneapolis
	Lindberg, Vernon L.	Minneapolis
	Lindberg, Winston R.	Minneapolis
	Lindblom, Alton E.	North Mankato
	Lindblom, Maurice L.	Minneapolis
	Lindell, Robert	St. Paul
	Lindeman, Raymond J.	Paynesville
	Lindemann, Charles E.	Minneapolis
	Linderholm, Bruce E.	Minneapolis
	Lindgren, Russell C.	Minneapolis
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	Lindquist, Dale C.	Elbow Lake
	Lindquist, Richard H.	Minneapolis
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	Linke, Clara L.	Duluth
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	Linner, Gunnar	Minneapolis
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	Linner, John H.	Minneapolis
	Linner, Paul W.	Minneapolis
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	Lippman, Elmer W.	Hutchinson
	Lipschultz, Oscar	Minneapolis
	Lipscomb, Paul R.	Rochester
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	Litman, Abraham B.	Minneapolis
	Litman, Samuel N.	Duluth
	Litzow, Thaddeus J.	Rochester
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	Lommen, Peter A., Jr.	Austin
	Longfellow, Helen W.	Brainerd
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	Loomis, George L.	Winona
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	Lott, Frederick H.	Minneapolis
	Louisell, Charles T.	Fairmont
	Love, J. Grafton	Rochester
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	Lowe, Alexander D.	So. St. Paul
	Lowe, Earl R.	So. St. Paul
	Lowe, Thomas A.	So. St. Paul
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	Lowry, Jeannette K.	Minneapolis
	Lowry, Paul T.	Minneapolis
	Lowry, Thomas	Minneapolis
	Lu, Cheng-En	Fergus Falls
†	Luck, Hilda	Mankato
	Lueck, Wallace W.	Minneapolis
	Lufkin, Nathaniel H.	Minneapolis
	Lukk, Olaf	Montgomery
	Lund, Carl J.	Fergus Falls
	Lund, George W.	Minneapolis
	Lund, J. Benjamin	Mankato
	Lund, Werner J.	Staples
	Lundberg, Ruth I.	Minneapolis
	Lundblad, Roy A.	Minneapolis
	Lundblad, Stanley W.	Minneapolis
	Lundeberg, Karl R.	Minneapolis
	Lundell, Carl L.	Granite Falls
	Lundholm, Arthur M.	Harris
	Lundquist, Curt W.	Owatonna
	Lundquist, Virgil J. P.	Minneapolis
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	Lyons, Michael W.	Minneapolis
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	Lysne, Myron	Robbinsdale
†	Lysyj, Anatol	Minneapolis
	Lyzenga, Anton G.	Minneapolis

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	McCampbell, Malcolm D.	Minneapolis
	McCannel, Malcolm A.	Minneapolis
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	McCarthy, Austin M.	Willmar
	McCarthy, Donald	Fort Snelling
	McClanahan, Thomas S.	White Bear Lake
	McClellan, Robert J.	St. Paul
	McCloud, C. Naumann, Jr.	St. Paul
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	McEnaney, James E.	Owatonna
	McEwan, Alexander	St. Paul
	McFarland, Arthur H.	Minneapolis
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	McGeary, George E.	Minneapolis
	McGill, Douglas B.	Rochester
	McGill, Leon K.	Virginia
	McGoon, Dwight C.	Rochester
	McGroarty, Brian J.	St. Paul
	McHaffie, Orval L.	Duluth
	McHenry, Martin	Rochester
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	McKenna, Maurice J.	Grand Rapids
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	McLaughlin, Byron H.	Minneapolis
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	McMurtrie, William B.	Minneapolis
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	McNeil, John J.	Minneapolis
	McNeil, Maurice R.	Glencoe
	McNeill, John A.	St. Paul
	McNutt, John R.	Duluth
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	MacDonald, John W.	Minneapolis
	MacDonald, Roger A.	Littlefork
	MacKinnon, Donald C.	Minneapolis
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	MacLean, Lloyd D.	St. Paul
	MacRae, Gordon C.	Duluth
	Mach, Frank B.	Minneapolis
	Mach, John R.	Minneapolis
	Mach, Ralph F.	Pine City
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	Madland, Robert S.	St. Paul
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	Magnuson, Allen E.	Wheaton
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	Magraw, Richard M.	Minneapolis
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	Mahle, Donald G.	Plainview
	Mahle, James P.	Minneapolis
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	Mandel, Sheldon L.	Minneapolis
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	Marshall, Clark M	Crosby
	Marshall, Hiram W.	Rochester
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	Marsovszky, Paul J.	Moorhead
	Martens, Theodore G.	Rochester
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	Martin, Doreen A.	Pepin, Wisconsin
	Martin, Dwight L.	St. Paul
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	Martin, George R.	Minneapolis
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	Martin, Harold R.	Rochester
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	Martin, Maurice J.	Rochester
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	Martin, William B.	Duluth
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	Martinson, Elmer J.	Wayzata
	Martinson, Raymond M.	Eveleth
	Marvin, Joseph E.	Brainerd
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†	Masson, James C.	Rochester
	Masson, James K.	Rochester
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	Mast, Frederick L.	Chisholm
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	Mateo, Guillermo	St. Paul
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	Mathews, Wallace E.	Mankato
	Mathieson, Don R.	Rochester
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	Matthews, James H.	Minneapolis
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	Meinert, John K.	Willmar
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	Meller, Maurice	Brainerd
	Meller, Robert L.	Minneapolis
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	Merrick, Robert L.	St. Paul
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	Meyer, Paul F.	Faribault
	Meyer, Robert P.	Faribault
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	Michelson, Henry E.	Minneapolis
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	Middlebrook, John E.	Minneapolis
	Midthune, Andreen S.	Lake Park
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	Milhaupt, Emmett N.	St. Cloud
	Miller, Albert G.	St. Paul
	Miller, Arden L.	Minneapolis
	Miller, Fletcher A.	Minneapolis
	Miller, H. Dawes	Minneapolis
	Miller, Harold E.	Minneapolis
	Miller, Hugo E.	Minneapolis
	Miller, J. Carlton	Minneapolis
	Miller, Herman	Austin
	Miller, Robert C.	Owatonna
	Miller, Roland D.	Rochester
	Miller, Ross H.	Rochester
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	Miller, William P.	Montevideo
	Miller, William T.	W. St. Paul
	Miller, Winston R.	Red Wing
	Miller, Zondal R.	St. Paul
	Millett, D. Keith	Minneapolis
	Millikan, Clark H.	Rochester
	Mills, John L.	Winnebago
	Mills, Stephen D.	Rochester
	Milnar, Frank J.	St. Paul
	Milroy, Thomas W.	White Bear Lake
	Milton, John S.	Minneapolis
	Minder, John G.	Mound
	Minge, Raymond K.	Worthington
	Minsky, Armen A.	Minneapolis
	Mishek, Charles J.	St. Paul
†	Missakian, Michael M.	Rochester
	Mitby, Irvin L.	Minneapolis
	Mitchell, Berton D.	Minneapolis
	Mitchell, Edward C.	Minneapolis
	Mitchell, George S.	St. Paul
	Mitchell, Mancel T.	Minneapolis
	Mixer, Harry W.	Minneapolis
	Moberg, Clarence W.	Detroit Lakes
	Mochal, Milo A.	Thief River Falls
	Mock, Charles J.	Virginia
	Moe, John H.	Minneapolis
	Moe, Thomas	Moose Lake
	Moe, W. Wyatt	Minneapolis
	Moehn, John T.	Minneapolis
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	Moen, Johannes K.	Minneapolis
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	Moersch, Herman J.	Rochester
	Moersch, Richard N.	Rochester
	Moertel, Charles G.	Rochester
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	Molander, Herbert A.	St. Paul
	Molenaar, Robert E.	Cannon Falls
	Moller, Jurgen	Farmington
	Mollers, Theodore P.	Soudan
	Molnar, George D.	Rochester
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	Monahan, Robert H.	St. Paul
†	Monge, James J.	Rochester
	Monserud, Nels O.	Cloquet
	Monson, Einer M.	Minneapolis
	Monson, Leonard J.	Canby
†	Montgomery, Hamilton	Rochester
	Mooney, Robert D.	St. Paul
	Moody, Edson B.	Minneapolis
	Moore, Irvin H.	Minneapolis
	Moorhead, Marie	Minneapolis
	Moos, Daniel J.	Minneapolis
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	Moral, Harvey M.	Minneapolis
	Moran, Leo J.	New Brighton
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†	Moren, J. Adelaide	White Bear Lake
	Morgan, Hugh O.	Amboy
	Mori, Hideo	Rochester
	Moriarty, M. Berenice	St. Paul
	Moriarty, Cecile R.	St. Paul
	Mork, A. Harold	Anoka
	Mork, Frank E.	Anoka
	Morlock, Carl G.	Rochester
	Morrell, Frank	Minneapolis
	Morrison, Charlotte J.	Minneapolis
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†	Mortensen, Nels G.	Minneapolis
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	Moses, Royal R.	Kenyon
	Moskowitz, Roland W.	Rochester
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	Moulton, Keith B.	St. James
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	Moyer, John B.	Duluth
	Moyer, Leonard B.	Minneapolis
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	Muchow, Gene C.	Austin
	Mueller, Donald R.	Bloomington
	Muesing, Mark A.	Tyler
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	Munneke, Lyle	Clara City
	Munson, Martin S.	Barnum
	Muntz, Keith S.	Rochester
	Murn, Thomas G.	St. Cloud
	Murphy, Edmund P.	Minneapolis
	Murphy, Frank P.	Rochester
	Murphy, Jack T.	St. Paul
	Murphy, Joseph E.	Marshall
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	Myers, John W.	Canby
	Myers, Thomas T.	Rochester
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	Nakamura, James Y.	Deer River
	Nash, Eldore B.	Minneapolis
	Nash, Leo A.	St. Paul
	Naslund, Ames W.	Minneapolis
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	Neary, Richard P.	Minneapolis
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	Neibergs, Pauls	St. Paul
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	Nelson, Edward N.	Minneapolis
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	Nelson, Louis A., Jr.	St. Paul
	Nelson, Luther A	Rush City
	Nelson, Maxine O.	Minneapolis
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	Nesset, Lawren B.	Minneapolis
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	Nordman, Willard F.	Mora
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	Norman, Mark L., Jr.	Minneapolis
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	Nye, Lillian L.	St. Paul
	Nygren, William T.	Braham
	Nylander Emil G.	Minneapolis
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	O'Brien, William A.	Minneapolis
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†	O'Donnell, James E.	Minneapolis
	O'Hanlon, John A.	Minneapolis
	O'Kane, Thomas W.	St. Paul
	O'Keefe, James P.	St. Cloud
	O'Leary, John B.	Brainerd
	O'Malley, Valentine	St. Paul
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	Odland, Olin M.	Granite Falls
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	Olfelt, Paul C.	Minneapolis
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	Olive, John T., Jr.	Mankato
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	Olmanson, M. Donald	St. Peter
	Olmanson, Vern C.	St. Peter
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	Olson, Albert J.	Owatonna
	Olson, Alton C.	Minneapolis
	Olson, Archie O.	Duluth
	Olson, Carl J.	Minneapolis
	Olson, C. Kent	Minneapolis
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	Olson, Duane O. C.	Minneapolis
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	Olson, Robert T.	Canby
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	Oppegaard, Chester L.	Crookston
	Oppen, E. Gerhard	Minneapolis
	Oppen, Melvin G.	Wayzata
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	Opstad, Earl T.	Minneapolis
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	Osmundson, Philip J.	Rochester
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	Ostergren, Edward W.	St. Paul
	Oswald, Arthur J.	Minneapolis
	Ott, Eugene C	Minneapolis
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	Ouellette, Alfred J.	St. Paul
	Ourada, Anthony L.	Fairmont
	Overton Dolphin H., Jr.	Rochester
	Owen, Charles A., Jr.	Rochester
	Owen, Richard R.	Minneapolis
	Owens, Ben P.	Hibbing
	Owens, Frederick M., Jr	St. Paul
	Owens, William A.	Montevideo
	Ownbey, Richard P.	Rochester
	Ozolins, Marta	Faribault
	Paal, Dwain J.	Minneapolis
	Paciotti, Vincent J.	Hibbing
#	Packard, Dean W.	Unknown
	Page, Raymond L.	Minneapolis
	Palen, Benjamin J.	Minneapolis
	Palm, Neil M.	St. Paul
	Palmer, Clinton F.	Albert Lea
	Palmer, Gerald K.	Minneapolis
	Palmer, Harry A.	Blackduck
†	Palumbo, Pasquale J.	Rochester
	Pansegrau, Duane F.	Karlstad
	Papermaster, Ralph	Two Harbors
	Papermaster, Theodore C.	Minneapolis
	Park, Wilford E.	Minneapolis
	Parker, Charles W.	Wadena
	Parker, Phillip J.	Staples
	Parker, Robert L.	Rochester
	Parker, Warren E.	Sebeka
	Parker Wilbert H.	Chisholm
	Parkhill, Edith M	Rochester
	Parkin, Thomas W.	Rochester
	Parris, Jaime	Rochester
	Parshall, William A.	Rochester
	Parson, E. Irvine	Duluth
	Parson, E. Lillian B.	Elbow Lake
	Parson, Lester R.	Elbow Lake
	Parsons, R. A.	St. James
	Persons, Ralph L.	Trimont
	Persons, Ralph L.	Trimont
	Pascuzzi, Chris A	Rochester
	Pasek, Antone W.	Cloquet
	Patch, Orien B.	Duluth
	Patrick, Robert T.	Rochester
	Pattee, James J.	Minneapolis
	Patten, John C.	Austin
	Patterson, Hugh D.	Slayton
†	Patterson, Richard J.	Rochester
†	Patterson, William L.	Fergus Falls
	Paule, William J.	Minneapolis
	Paulson, Elmer C.	Minneapolis
	Paulson, John A	Rochester
†	Paulson, Theodore S.	Fergus Falls
†	Paulson, Wallace J.	St. Paul
	Paulus, Harold E.	Austin
	Payne, Richard E.	Virginia
	Payne, William S.	Rochester
†	Pearsall, Robert P.	Virginia
	Pearson, Bror F.	Shakopee
	Pearson, Fritz R.	St. Paul
	Pearson, Malcolm M.	St. Paul
	Pease, Gertrude L.	Rochester
†	Peck, Donald A.	Rochester
	Peck, Willard R.	St. Paul
	Pedersen, Arthur H.	St. Paul
	Pedersen, Robert L.	Brainerd
	Pedersen, Roy C.	Duluth
	Peikert, Carl	Elbow Lake
	Peluso, Charles R	Minneapolis
	Pelzl, Charles R.	Pine River
†	Pemberton, John deJ.	Rochester
	Penk, Engward L.	Springfield
	Penn, George E.	Mankato
*†	Pennie, Daniel F.	Duluth
†	Peppard, Thomas A.	Minneapolis
	Perkins, Douglass E.	Alexandria
	Perlman, Everett C.	Minneapolis
	Perlman, Herschel L.	Minneapolis
	Perry, Harold O.	Rochester
†	Perry, Hugh, Jr.	Rochester
†	Perry, Richard E.	Rochester
	Person, John P.	Albert Lea
	Pertl, Albert L.	Canby
	Peteler, Jennings, C. J.	Minneapolis
	Peters, Gustavas A.	Rochester
	Petersen, Byron D.	Minneapolis
	Petersen, Deane A.	Wayzata
	Petersen, Donald H.	Northfield
	Petersen, Glenn L	Minneapolis
	Petersen, Magnus C.	Rochester
	Petersen, Peter C.	Minneapolis
	Petersen, Robert T.	St. Cloud
	Petersen, William E.	Minneapolis
	Peterson, Alvin C.	Mora
	Peterson, David B.	St. Paul
	Peterson, Donald B	Anoka
	Peterson, Donald H.	St. Paul
	Peterson, Edward A.	St. Paul
	Peterson, Edward N.	Virginia
	Peterson, Harold O.	St. Paul
	Peterson, Herbert W.	Minneapolis
	Peterson, Joel L. E.	St. Paul
	Peterson, John A	St. Paul
	Peterson, John R.	Rushford
	Peterson, Kenneth A.	Marshall
	Peterson, Kenneth H.	Hutchinson
	Peterson, Lowell F. A.	Rochester
*	Peterson, Nordahl P.	Minneapolis
*	Peterson, Oliver H.	Minneapolis
	Peterson, Oliver H., Jr.	Minneapolis
	Peterson, Palmer A.	Minneapolis
†	Peterson, Peter E.	Minneapolis
	Peterson, Robert T.	St. Cloud
	Peterson, Roy A.	Vesta
	Peterson, Roy L.	White Bear Lake
	Peterson, Stanley C.	Austin
†	Peterson, Willard C.	Minneapolis
	Peterson, W. H.	Austin
	Peterson, Willard E.	Willmar
	Petit, Julien V.	Minneapolis
†	Petit, Leon J.	Minneapolis
	Petraborg, Harvey T.	Aitkin
	Petrick, Thomas G.	Eveleth
	Pettersen, George R.	Aitkin
	Pewters, John T.	Minneapolis
	Peyton, William T.	Minneapolis
	Phares, Otto C.	St. Cloud
†	Phelps, Kenneth A.	Menlo Park, Calif.
	Phelps, Robert D.	Marshall
	Phillips, Leonard	St. Paul
	Philp, David R.	Watertown
*	Pierce, Charles H.	Wadena
	Pierce, Jack R.	Williamson, West Va.
	Pierce, Robert B.	Renville
	Pierson, Roy F.	Slayton
	Pincus, Mitchell	Minneapolis
†	Piper, Monte C.	La Canada, Calif.
†	Piper, William A.	Mountain Lake
†	Pitlyk, Paul J.	Rochester
	Plasha, Matthew K.	Coon Rapids
	Plass, Herbert F. R.	Minneapolis
	Pleissner, Karl W.	Minneapolis
	Plimpton, Nathan C.	Minneapolis
	Plotke, Harry L.	St. Paul
	Plucker, Milton W.	Worthington
	Plum, George E.	Rochester
	Pohl, John F.	Minneapolis
†	Poirier, Joseph A.	Forest Lake
	Pollak, Kurt	Minneapolis
†	Pollard, John W.	Rochester
	Pollard, William S.	Duluth
	Polley, Howard F.	Rochester
	Pollman, Stanley E.	Thief River Falls
	Pollock, Anthony J.	Minneapolis
†	Pollock, David K.	Minneapolis
	Polski, Paul G.	South St. Paul
	Polzak, Jacob A.	Minneapolis
	Pone, John	Cambridge

	Ponterio, James E.	Shakopee
	Pool, Thomas L.	Rochester
	Popadiuk, Peter	Minneapolis
	Popovich, Dragojla	Anoka
†	Poppe, Frederick H.,	Coral Gables, Florida
	Poppie, R. W.	Brainerd
	Posey, John W.	Rochester
	Post, Edmund A.	St. Paul
	Potter, Robert B.	Minneapolis
	Potter, Wilfred M.	Rochester
	Power, John E.	Duluth
	Power, John E., Jr.	Duluth
†	Pratt, Fred J.	Minneapolis
	Pratt, Fred J., Jr.	Minneapolis
	Pratt, Joseph H., Jr.	Rochester
†	Preine, Irving A.	Osseo
	Priestley, James T.	Rochester
†	Preisinger, Joseph W.	Dallas, Texas
	Prentice, Walter B.	St. Paul
	Prem, Konald A.	Minneapolis
†	Preston, Frank S., Jr.	Minneapolis
	Price, William E.	Minneapolis
	Prickman, Louis E.	Rochester
	Priest, Robert E.	Minneapolis
	Priestley, James T.	Rochester
†	Prim, Joseph A.	Minneapolis
	Prins, Leo R.	Albert Lea
	Prlina, Isaac M.	Virginia
	Proeschel, Ray K.	Willmar
	Proffitt, William E.	Minneapolis
	Proshek, Lumir C.	Minneapolis
	Proud, Harry S.	St. Paul
	Pugh, David G.	Rochester
†	Pulec, Jack L.	Rochester
	Pumala, Erven E.	Warren
	Purnell, Don C.	Rochester
	Purves, G Harland	Buffalo
	Puumala, Barbara M.	Rochester
	Puumula, Reino H.	Cloquet
	Puumula, Ricard R.	Cloquet
	Quanstrom, Virgil E.	Brainerd
	Quast, John E.	Long Prairie
	Quattlebaum, Frank W.	St. Paul
	Quello, Robert O.	Minneapolis
	Quiggle, Arthur B.	Minneapolis
	Quist, Henry W., Jr.	Minneapolis
	Raaen, Olaf J.	St. Paul
	Raattama, John W.	Nashwauk
	Rabcevich, Anatole	St. Paul
	Racer, Harley J.	Minneapolis
	Radke, Robert L.	Montevideo
	Raetz, Sylvester J.	Maple Lake
	Raile, Richard B.	Minneapolis
	Rajala, Arnold I.	Grand Rapids
	Ralph, James R.	St. Paul
	Ralston, Donald E.	Rochester
	Ramlow, Ralph M.	St. Paul
†	Ramras, Donald G.	St. Paul
†	Ramsey, Walter R.	St. Paul
	Randall, David A.	Minneapolis
†	Randall, Lawrence M.	Rochester
	Randall, Raymond V.	Rochester
†	Ramras, Donald G.	St. Paul
	Ransom, H. Robert	Osseo
	Rasmussen, Ramby C.	St. Paul
	Rats, Otto N., Jr.	St. Paul
	Ravits, Harold G.	St. Paul
†	Rayner, Ralph R.	St. Paul
	Rea, Charles E.	St. Paul
	Reardon, Andrew E.	Duluth
	Recht, Thomas M.	Minneapolis
	Reed, Henry H.	Duluth
	Reed, Paul	Virginia
	Reed, Sheldon C.	Minneapolis
	Reese, David F.	Rochester
	Reff, Alan R.	Crookston
	Regan, John J.	Minneapolis
	Regnier, Edward A.	Minneapolis
	Reichel, Samuel M.	Minneapolis
	Reichelderfer, Charles F.	Staples
	Reichelt, Leland G.	Wadena
	Reid, James W.	So. St. Paul
	Reif, Harold A.	Minneapolis
	Reif, Henry J.	St. Cloud
	Reif, Robert W.	White Bear Lake
	Reiley, Richard E.	Minneapolis
	Reinhardt, James H.	Alexandria
	Reiser, Milton P.	Minneapolis
	Reitemeier, Richard J.	Rochester
	Reitmann, John H	Hastings
	ReMine, William H., Jr.	Rochester
	Remole, William D	Minneapolis
	Remsberg, Robert R.	Tracy
†	Replogle, William H.	Los Angeles, Calif.
	Resch, Joseph A.	Minneapolis
	Restall, Charles J.	Rochester
	Retzlaff, John	Rochester
	Reuland, John J.	Rochester
	Reynolds, Donald P.	Minneapolis
#	Reynolds, James F.	So. Madley, Mass.
#	Reynolds, William A.	New York City
	Rholl, Arnold O.	Minneapolis
	Rice, Carl O.	Minneapolis
	Rice, Fred A.	Minneapolis
	Rice, Hagbart G.	Moorhead
	Rice, William H.	St. Cloud
	Richards, Albert M.	St. Paul
	Richards, William B.	St. Cloud
	Richardson, Edward J., Jr.	St. Paul
	Richardson, Robert J.	Minneapolis
	Richdorf, Lawrence F.	Minneapolis
	Richter, Paul H.	Fergus Falls
	Richter, David J.	Virginia
	Rick, Paul F. W.	St. Paul
	Rieke, Wellington W.	Wayzata
†	Ries, Gerald E.	Rochester
	Rieschl, Elizabeth K.	Jordan
	Riggs, Byron L., Jr.	Rochester
	Rimas, Matthew J.	Comfrey
	Ringle, Otto F.	Walker
	Rinkey, Eugene	St. Paul
	Riordan, Elsie M.	Minneapolis
	Ripple, Rudolph J.	St. Paul
	Ripple, Rudolph J., Jr.	Minneapolis
	Risch, Ronald E.	Minneapolis
	Risser, Aldon F.	Stewartville
	Ritchie, Wallace P.	St. Paul
	Ritt, Albert E.	St. Paul
	Rivers, Morris H.	Rochester
	Rizer, Dean K.	Minneapolis
	Roach, Donald E.	St. Paul
†	Robb, Edwin F.	Baco Raton, Florida
	Robbins, Mason C.	St. Paul
	Robbins, Owen F.	Minneapolis
	Roberts, Byron H.	Minneapolis
	Roberts, George A.	Austin
	Roberts, Lewis J.	Minneapolis
	Roberts, Oliver W.	Owatonna
	Roberts, Stanley W.	Minneapolis
	Robertson, Paul A.	Austin
*†	Robilliard, Charles M.	Faribault
	Robinson, Cortland O.	Minneapolis
	Rock, William H.	Anoka
	Rocknem, Robert E.	Minneapolis
	Rockwell, Curtiss V.	Minneapolis
	Rockwood, Philo H.	Fergus Falls
†	Rodda, Frederick C.	Minneapolis
	Rodgers, Richard S.	Minneapolis
	Roedling, Herbert	Rochester
	Roehlke, Arthur B.	Elk River
	Roemer, Henry J	Winona
	Rogers, Charles W.	Winona
	Rogin, Norton	Minneapolis
	Rogne, William G.	Spring Grove
	Roholt, Christian L.	McIntosh
	Roholt, Hartvig B.	Fosston
	Rohrer, Christian O.	Worthington
	Rohrer, Thomas P.	Waseca
	Rolig, David H.	St. Paul
	Rollie, Orris O.	St. Paul
	Rollins, Pat	Wayzata
	Rome, Howard P.	Rochester
	Romness, Kenneth B.	Mound
	Rooke, Edward D.	Rochester
	Rorem, Joseph A.	Appleton
	Rose, John T.	Lakefield
	Rosenbaum, David L.	Minneapolis
	Rosendahl, Frederick G.	Minneapolis
	Rosenfield, Abraham B.	Minneapolis
	Rosenow, John H.	Minneapolis
	Rosenthal, F. Harold	Austin
	Rosenthal, Robert	St. Paul
†	Rosenwald, Reuben M.	Coon Rapids
	Ross, Alexander J.	Minneapolis
	Ross, James V., Jr.	Rochester
	Ross, Margaret	Rochester
	Rossberg, Raymond A.	Morris
	Rossen, Ralph	Minneapolis
	Rossing, Robert G.	St. Paul
	Rotenberg, Robert J.	Minneapolis
	Rotenberg, Samuel	Minneapolis
	Roth, Frederick D.	Mankato
	Roth, George C.	St. Paul
	Rothnem, Morris S.	Minneapolis
†	Rothschild, Harold J.	St. Paul
	Roust, Henry A.	Montevideo
	Rovelstad, Randolph A.	Rochester
	Rowe, Clarence J., Jr.	St. Paul
†	Rowe, Olin W.	Duluth
	Rowland, Spencer A.	Rochester
	Rowles, Everett K.	Coleraine
	Roy, Phil C.	St. Paul
	Ruchie, Warren H.	Willmar
	Rucker, Charles W.	Rochester
	Rucker, Thomas K.	Minneapolis
	Rucker, William H.	Minneapolis
	Rud, James A.	Buffalo Lake
	Rud, Norman E.	Minneapolis
	Rudie, Peter S.	Duluth
	Rudie, William D.	Duluth
	Ruffolo, Eugene H.	Rochester
	Ruggles, George M.	Forest Lake
†	Ruhberg, George N.	Santa Barbara, Calif.
	Rukavina, John G.	St. Paul
†	Rulon, John T.	Rochester
	Rumpf, Carl W.	Faribault
	Runquist, John M.	Duluth
	Runquist, Richard K.	Anoka
	Rushay, Arthur J.	White Bear Lake
	Rushton, Joseph G.	Rochester
	Russ, Homer	Le Center
	Russ, Homer H.	Blue Earth
	Russeth, Arthur N.	Minneapolis
	Rusten, Elmer M.	Minneapolis
	Rusterholz, Alan P.	St. Paul
	Ruth, Bradley R.	Duluth
	Rutledge, John B.	Detroit Lakes
	Rutledge, Lloyd H.	Detroit Lakes
†	Ryan, John J.	St. Paul
	Ryan, Joseph M.	St. Paul
*	Ryan, William J.	Duluth
	Rydburg, Wayne C.	Minneapolis
	Ryding, Vincent	Mountain Lake
	Rydland, Arne D.	Minneapolis
	Rygh, Harold N.	Atwater
	Rynda, Edwin R.	New Prague
	Rynearson, Edward H.	Rochester
	Rysgaard, George N.	Northfield
	St. Cyr, Harry M.	Robbinsdale
	St. Cyr, Kenneth J.	Robbinsdale
	Sach-Rowitz, Alvan	Moose Lake
*	Sadler, William P.	Minneapolis
	Saffert, Cornelius A.	New Ulm
	Sahr, Walter C. G.	Hutchinson
†	Salamone, Charles R.	Rochester
	Salassa, Robert M.	Rochester
	Saliterman, Bernard I.	Minneapolis
	Salk, Richard J.	Albany
	Salovich, Edward L.	Minneapolis
	Salter, Reginald A.	Virginia
	Sandeen, Robert M.	Buffalo
†	Salter, Reginald A.	Virginia
	Sandeen, Robert M.	Buffalo
†	Sanderson, Anton G.	Ashby
†	Sanderson, David R.	Rochester
	Sandler, Bernard	Minneapolis
	Sandt, Karl E.	Minneapolis
†	Sandven, Nels O.	Paynesville
	Sanford, John B.	Duluth
	Sanford, Raymond A.	Mankato
†	Sarff, Oliver E.	Duluth
	Sarnecki, M. M.	St. Paul
	Sartor, Richard	Minneapolis
	Sasano, Joseph R., Jr.	Rochester
†	Satersmoen, Theodore	Pelican Rapids
	Sather, Edgar L.	Fosston
	Sather, Edgar R.	Alexandria
	Sather, George A.	Fosston
	Sather, Richard N.	Fosston
	Sather, Russell O	Crookston
	Satterlee, Howard W.	Lewiston
	Savelkoul, Gene R.	Belgrade
	Saver, William G.	Rochester
	Sawaryniuk, Iwan	Waconia
	Sawatzky, William A.	Minneapolis
	Sawtell, Robert R.	Worthington
	Sax, Milton H.	Duluth
	Sax, Simon G.	Duluth
	Saxman, Gertrude E. O.	Ulen
	Sayre, George P.	Rochester
	Sborov, Abe M.	Minneapolis
	Scallen, Raymond W.	Minneapolis
	Scanlon, Paul W.	Rochester
	Schaaf, Frederick H. K.	Minneapolis
	Schaar, Frances E.	Minneapolis
	Schade, Frederick L.	Worthington
	Schaefer, Joseph C.	Orange Park, Fla.
	Schaefer, Kenneth F.	Minneapolis
	Schaefer, Wesley G.	Minneapolis
	Scheidel, Alois McK.	Mankato
	Schaffhausen, Irwin F.	Minneapolis
	Schaffhausen, Mildred	Minneapolis
	Schamber, Walter F.	Parkers Prairie
†	Schattenberg, Thomas T.	Rochester
†	Scheldrup, N. H.	Minneapolis
	Scherer, L. Raymond	Minneapolis
	Scherling, Sidney S.	Minneapolis
	Scheuneman, Allen F.	Warroad
	Schiele, Burtrum C.	Minneapolis
	Schimelpfenig, George T.	Chaska
	Schirber, Martin J.	Grand Rapids
	Schirger, Alexander	Rochester
	Schissel, Gregory A.	Minneapolis
	Schloff, Ivan	St. Paul
	Schmid, John F.	Duluth
	Schmidt, Charles D.	Rochester
	Schmidt, Herbert W.	Rochester
	Schmidt, Hilmar R.	Rushford
	Schmidt, Paul G., Jr.	Granite Falls
	Schmidt, Ruben F.	Alden
	Schmidt, W. Robert	Minneapolis
	Schmidtke, Reinhardt L.	St. Paul
†	Schmitt, S. C.	Los Angeles, Calif.
	Schmitz, Anthony A.	Mankato

	Schmitz, Everett J.	St. Cloud
	Schnabel, Robert F.	Crookston
	Schneck, Jack I.	Minneapolis
	Schneider, Lawrence E.	Duluth
	Schneider, Paul J.	Adams
	Schnell, Frederick S.	Litchfield
†	Schoch, Robert B. J.	St. Paul
	Schoeneberger, P. B.	Perham
	Schoening, Herbert A.	Minneapolis
	Scholz, Donald A.	Rochester
	Schons, Edward	St. Paul
	Schottler, Max E.	Minneapolis
	Schrantz, R. D.	Park Rapids
†	Schroder, Charles H.	Pottstown, Pa.
	Schroeckenstein, Hugo F.	St. Paul
	Schroeder, Albert J.	Minneapolis
	Schroeppel, John E.	Winthrop
	Schuft, James R.	Morris
†	Schuldt, Frederick C.	St. Paul
	Schultz, Alvin L.	Minneapolis
	Schultz, Earl A.	Minneapolis
	Schultz, J. Harold	Minneapolis
	Schultz, Peter J.	Minneapolis
	Schulz, Robert W.	Fairmont
†	Schulze, Albert G.	St. Paul
	Schulze, William M.	Minneapolis
	Schumacher, John W.	Minneapolis
	Schutz, Elmer S.	Mountain Lake
	Schwartz, Carl A.	Austin
	Schwartz, E. Robert	Minneapolis
#	Schwartz, John T.	Norfolk, Va.
	Schwartz, Virgil J.	Minneapolis
	Schweiger, Theodore R.	Hibbing
	Schwyzer, Hanns G.	St. Paul
	Schwyzer, Marguerite	St. Paul
	Scott, Eugene E.	St. Paul
	Scott, Horace G.	Minneapolis
#	Scott-Miller, James R.	Phoenixville, Pa.
	Scruggs, Thomas	Rochester
	Scudamore, Harold H.	Rochester
†	Seaberg, John A.	Pequot Lakes
	Seashore, Rosel T.	Duluth
†	Sedlack, Richard E.	Rochester
	Seery, Thomas M.	Austin
	Segal, Edward L.	Minneapolis
	Segal, Martin A.	Minneapolis
†	Seham, Max	Minneapolis
	Seifert, Milton H.	Excelsior
	Seifert, Otto J.	New Ulm
	Sekanina, Jan	Babbitt
	Sekhon, Mohan S.	St. Paul
	Selck, Wolfgang T. E.	Minneapolis
	Seldon, Thomas H.	Rochester
	Sells, Richard J.	St. Paul
	Selmo, Joseph D.	Norwood
	Semsch, Robert D.	Wayzata
	Sethre, Arthur E.	Fergus Falls
	Setzer, Hobert J.	St. Paul
	Setzer, Hobert J., Jr.	Mankato
	Shamblin, James R., Jr.	Rochester
	Shandorf, James F.	Minneapolis
	Shannon, William R.	St. Paul
	Shaperman, Eva P.	Minneapolis
	Shapiro, Irving	Minneapolis
	Shapiro, Sidney K.	Minneapolis
	Sharp, David V.	Minneapolis
	Shaver, Ward	Fergus Falls
	Shaw, Howard A.	Minneapolis
	Shea, Andrew W.	Minneapolis
	Sheedy, Chester L.	Austin
	Shelander, Marcus I.	St. Paul
†	Shelman, John L.	Pacific Palisades, Calif.
	Sheppard, Charles G.	Hutchinson
	Sheps, Sheldon G.	Rochester
	Sher, David A.	Virginia
	Sher, Lewis	Minneapolis
	Sherman, Alfred G.	Albert Lea
	Sherman, Carnot H.	Bayport
†	Sherman, Charles L.	Luverne
	Sherman, Lloyd F.	Minneapolis
	Sherman, Morris H.	Minneapolis
	Sherman, Royal V.	Red Wing
†	Sherrick, Donald W.	Rochester
	Shick, Richard M.	Rochester
†	Shillington, Maurice A.	Fort Lauderdale, Florida
	Shin, Rok W.	Howard Lake
	Shragg, Robert I.	Minneapolis
	Shronts, John F.	Minneapolis
	Shugart, Robert R.	Rochester
†	Sibley, William L., III	Rochester
	Sidell, Franklin D.	Minneapolis
	Siegel, Clarence	St. Paul
	Siegel, John S.	Virginia
	Siegmann, William C.	Minneapolis
	Siekert, Robert G.	Rochester
	Silas, Ralph M.	Minneapolis
	Silver, John D.	Minneapolis
	Silverman, Lloyd	Rochester
	Silverstein, Murray N.	Rochester
†	Silvis, Stephen E.	St. Paul
	Simison, Carl	Barnesville
	Simmonds, Harry N.	Prior Lake
	Simmons, Richard K.	Minneapolis
	Simons, Bernard H.	Chaska
†	Simons, Jalmar	Aspen, Colorado
†	Simons, John N.	Rochester
	Simonson, Donald B.	Minneapolis
	Simonton, Kinsey M.	Rochester
‡	Simpson, Ellery De W.	Ashville, N. C. North Carolina
	Sinamark, Andrew	Hibbing
	Singbeil, J. H.	Breckenridge
	Singer, Benjamin J.	St. Paul
	Sinykin, Melvin B.	Minneapolis
	Sipe, James W.	Coon Rapids
	Siperstein, David M.	Minneapolis
	Sisk, Harvey E.	St. Cloud
	Sisler, Clifford E.	Minneapolis
	Sisterman, Thomas J.	Minneapolis
	Sjoding, J. Donald	Mankato
	Sjostrom, Lawrence E.	St. Peter
	Skaife, William F.	Benson
	Skaug, Harold M.	Chatfield
	Skinner, Abbott	St. Paul
†	Skinner, Harvey O.	St. Paul
	Skjold, Arthur C.	Minneapolis
	Skogerboe, Rudolph B.	Karlstad
†	Skworcow, George	Minneapolis
	Slocumb, Charles H.	Rochester
	Smiley, Donald P.	St. Paul
	Smiley, John T.	Minneapolis
	Smisek, Elmer A.	St. Paul
	Smisek, Frank M.	Minneapolis
	Smith, Adam M.	Minneapolis
	Smith, Archie M.	Minneapolis
	Smith, Baxter A., Jr.	Minneapolis
	Smith, Cyril M.	Duluth
	Smith, Don V.	Blue Earth
†	Smith, Frederick L.	Rochester
	Smith, George R.	Hutchinson
	Smith, Graham G.	Minneapolis
	Smith, Harry J.	Lake Crystal
†	Smith, Harry L.	Rochester
	Smith, John E.	Minneapolis
†	Smith, John H.	Rochester
	Smith, Lloyd A.	Willmar
	Smith, Lucian A.	Rochester
†	Smith, Margaret I.	Gardena, Calif.
†	Smith, Myron W.	Red Wing
	Smith, Nadine G.	Minneapolis
	Smith, Norvin R.	Willmar
	Smith, Paul M.	Lake Crystal
	Smith, Ralph E.	Rochester
	Smith, Reginald A.	Rochester
	Smith, Theodore S.	Minneapolis
	Smith, Thorsten	Faribault
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VOLUME 44 INDEX

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A

Abdominal Penetrating Wounds, 143
Abnormal, Persistent, Lactation, 188
Abortion, Incompetent Cervicals as a Factor in Habitual, The value of Shirodkar Operation, 224
Absolon, Karel; Noble, J. Lawrence; Hunter, Samuel W. and Roth, Norman A.: Clinical Use of a Permanently Implanted Bipolar Myocardial Electrode for Complete Heart Block, 16
Acute Renal Failure, Treatment of. Experience of the artificial kidney team at the University of Minnesota Hospitals in 1959, 89
Adenomyosis and Endometriosis, Some Facets of, 472
Aged and Senile, problems in the care of the, 92
Alcoholism and Drug Addiction, 445
Anal Surgery in Infants and Children, 326
Anaphylaxis and Endotoxin Shock, The Role of Serotonin in, 417
Anderson, Duane R.; Lynch, Francis W. and Tuura, James L.: Griseofulvin in the Treatment of Dermatomycoses, 422
Ankle Fractures, Slipping, 159
Antibiotics, Topical, 227
Antibiotics, Untoward Reactions to, 406
Aortic Stenosis, Congenital, 312
Arterial Emboli and Atrial Fibrillation, the significance of, in surgery of the mitral valve, 148
Arterial Injuries, Diagnosis and Treatment of, 133
Arteriovenous Fistulas, Congenital, of the Extremities, 160
Atrial Fibrillation and Arterial Emboli, the significance of, in surgery of the mitral valve, 148
Ausman, Robert K.; Blum, John A.; Bonnabeau, Raymond C.; Doberneck, Raymond C.; Pankey, George A.; Walder, Arnold; Reiser, Milton P. and Bernstein, Eugene F.: Treatment of Acute Renal Failure, Experience of the artificial kidney team at the University of Minnesota Hospitals in 1959, 89
Autogenous Median Neuropathy, diagnosis and treatment, 109

ABSTRACTS AND BRIEFS

Acute Pyogenic Parotitis, 339
Breast Cancer Follow-up, 493
Brucellosis of Bones & Joints, 548
Complications of Carotid Manipulation, 340
Determination of Dominant Hemisphere, 246
Diagnosis of Melanomas, 208
Ear Infections in Bottle Fed Babies, 65
Early Post-Operative Peristalsis, 339
Effect of Hypothermia in Bowel Absorption, 121
Etiology of Bile Peritonitis, 65
Fluorescein Cancer Diagnosis, 208
Griseofulvin Dosage Change, 207
Headaches, 547
Immune Milk - Valuable, 120
Incidence of Malignant "Benign" Ulcers, 208
Indications for Splenectomy, 387
Infant Hernia Repair, 339
Influence of Temperature of Venous Blood in the Extremities, 120
Localization of Metallic Foreign Bodies, 387
Midcalf Amputation for Peripheral Vascular Disease, 547
Neuropathy in Diabetes, 65
New Surgery in Pancreatitis, 120
New Surgical Theory on Peptic Ulcer, 548
Nutrition in Gastrectomy, 246
Nylon in Hernia Repair, 340
Perforated Duodenal Diverticulum, 548
Postoperative Intussuseption, 493
Prevention of Cancer Spread, 207
Prevention of Strokes Possible, 121
Radical Surgery for Gastric Cancer, 167
Science Explains Goofs, 121
Spinal Fluid Protein, 431
Surgical Failure in Hernia, 207
Surgical Repairs of Deltoid Ligament, 246
Surgical Syndactylia. 547
Treatment of Localized Lymphomas, 431
Use of Tracheotomy, 387
Vagotomy in Duodenal Ulcer, 388
Value of Cholecystograms?, 167
Value of Enzymes in Debridgement, 388
Welfare Drug Cost Reduction, 121

AMERICAN MEDICAL ASSOCIATION

AMA Meeting Events & Actions Reported, 351
AMA Officials Testify in Drug Hearings, 355
Major AMA Clinical Meeting Delegates' Actions Reviewed, 82

THE ART OF MEDICINE

Are Your Letters Old Fashioned?, 39
Attend Your Medical Public Relations Institute, 357
Communications Value of a Speaker Bureau, 400
Cost of Medical Care, 131
Do You Make Your Words Count?, 399
"Doctor, Tell Me" Radio Series, 501
Don't Hide Your Light, 38
Facts and Fallacies about Your American Medical Association, 555
Good Press Relations Require Doctor-Press Cooperation, 304
Help Wanted, 219
Medicine and the Code of Ethics, 304
New Film Shows Rewards of Retirement, 258
1961 is a Year of MD Public Relations Challenge, 179
No Need to be in the Dark, 40
The Spoken Word, 399
To All My Patients, 258
What's Your Public Relations I.Q.?, 442
Winning Ways with Patients, 257
You and Your Minnesota State Medical Association Mail, 87

B

Banner, Edward A.: A Quarter Century of the Minnesota Obstetrical and Gynecological Society, 476
Beirstein, S. S.: Renal Colic, 99
Berman, David A.: Fatal Coronary Occlusion, Following TSH Test, 370
Bernstein, Eugene F.; Ausman, Robert K.; Blum, John A.; Bonnabeau, Raymond C.; Doberneck, Raymond C.; Pankey, George A.; Walder, Arnold; and Reiser, Milton P.: Treatment of Acute Renal Failure, Experience of the artificial kidney team at the University of Minnesota Hospitals in 1959, 89

Berryman, G. H.: Nutrition in Medical Practice - past and present, 454
Biological Warfare and the Livestock Industry, 279
Biological Warfare could wipe out our civilization, 259
Blank, Norman and Handler, Seymour: Sarcoidosis, as a cause of Portal Hypertension and Esophageal Varices, 363
Blood Smears in Lymphoproliferative Disease, 1
Blum, John A.; Bonnabeau, Raymond C.; Doberneck, Raymond C.; Pankey, George A.; Walder, Arnold; Reiser, Milton P.; Bernstein, Eugene F. and Ausman, Robert K.: Treatment of Acute Renal Failure. Experience of the artificial kidney team at the University of Minnesota Hospitals in 1959, 89
Bonnabeau, Raymond C.; Doberneck, Raymond C.; Pankey, George A.; Walder, Arnold; Reiser, Milton P.; Bernstein, Eugene F.; Ausman, Robert K.; and Blum, John A.: Treatment of Acute Renal Failure, Experience of the artificial kidney team at the University of Minnesota Hospitals in 1959, 89
Botulism, A case Report of Suspected, 192
Breining, Frederick: Hospital Organization for Disasters and Evacuation, 275
Brenner Tumor, Report of Case, 204
Brown, Paul M. and Judd, Edward S.: Thyroglossal Cysts and Sinuses in Children, results of the sistrunk operation, 516
Bunting, Russell W.: Hospital Assignments for Dentists, 278

BOOK REVIEWS

Conn, Howard F.: Current Therapy. (390)
del Plaine, Carlos W.: Second Growth, The Saga of a New Boy in Town (389)
Dubos, Rene: Mirage of Health (389)
Edwards, Jesse E.: An Atlas of Acquired Diseases of the Heart and Great Vessels (341)
Francois, Jules: Heredity in Opthalmology (494)
Goodman, Robert P.: Lose Weight and Live (342)
Key and Conwell: Management of Fractures, Dislocations and Sprains (342)
Kroger, William S.: Childbirth with Hypnosis (390)
Lawford, Giovanna: The Human Frame (342)
Levinsohn, Florence: What Teenagers Want to Know (494)
Lewin, Philip: The Foot and Ankle, Their Injuries, Diseases, Deformities and Disabilities (389)
MacCarty, Collin: Surgical Treatment of Intra-Carnial Meningiomas (390)
Ogle, Kenneth N; and Thomas, Charles C.: Optics. An Introduction for Ophthalmologists (432)
Phibbs, Brendan: The Cardiac Arrhythmias. A Guide for the General Practitioner (432)
Riseman, Joseph E. F.: P-Q-R-S-T, A Guide to Electrocardiogram Interpretation (494)
Risley, Mary: The House of Healing (432)
Silver, Henry; Kempe, C. H. and Bruyn, Henry B.: Handbook of Pediatrics, 4th Edition (341)
Smith, L. A.: An Atlas of Pain Patterns (389)
Winkelmann, R. K.: Nerve Endings in Normal and Pathologic Skin. Contributions to the Anatomy of Sensation (390)

C

Calming the Irritable Infant with a Simple Tonal Device, 527
Camp Needlepoint 1960, Minnesota's Camp for Diabetic Children, 334
Carcinoma of the Stomach, Long-Term Survival of, Following Partial Gastrectomy, 52
Catheter Duodenostomy in Gastrectomy, 181
Cervicals, Incompentent, as a Factor in Habitual Abortion, The Value of Shirodkar Operation, 224
Chemical Warfare, another Serious Hazard, 283
Chest Pain Associated with Hypertension in the Lesser Circulation, 374
Civil Defense, Medical Organization of Target Cities, 263
Civil Defense and Medical Profession, 291
Clinical Use of a Permanently Implanted Bipolar Myocardial Electrode for Complete Heart Block, 16
Coffey, William F. X. and Cooper, Talbert: Blood Smears in Lymphoproliferative Disease, 1
Colonic Hemorrhage, Massive, 41
Cooper, Talbert and Coffey, William F. X.: Blood Smears in Lymphoproliferative Disease, 1
Coronary Heart Disease, Emotional Stress in the Etiology of, 155
Coronary Occlusion, Fatal, Following TSH Test, 370
Culligan, John A.; Jensen, N. Kenneth and Schmidt, W. Robert: Palliation in non-resectable adenocarcinoma of the cardia, description of a new technique, 6
Cyst, Giant Ovarian of the Newborn, 330
Cystic Fibrosis of the Pancreas, Therapy of, 307
Cysts, Thyroglossal, and Sinuses in Children, Results of The Sistrunk Operation, 516

COMMITTEE REPORT

A Proposed Tuberculosis Control and Treatment Program for Minnesota, 84

D

Davis, Arthur E., Jr.: Giant Ovarian Cyst of the Newborn, 330
Davis, Richard B. and Meeker, William R.: The role of Serotanin in Anaphylaxis and Endotoxin Shock, 417
Delaney, John P.: Congenital Arteriovenous Fistulas of the extremities, 160
Dermatomycoses, Griseofulvin in the Treatment of, 422
DeRusso, Franklin and May, Mark: Congenital aortic stenosis, 312
Detar, J. S.: What do practicing physicians expect of the regional university medical centers, 196
Detar, J. S.: What the generalist thinks of the radiologist, 112
Diagnosis and Treatment of Arterial Injuries, 133
Diagnosis and Treatment of Autogenous Median Neuropathy, 109
Differential Diagnosis of Knee Injuries, 221
Disaster Preparedness, Concepts of Medical Supply Assessment in Terms of, 287
Doberneck, Raymond C.; Pankey, George A.; Walder, Arnold; Reiser, Milton P.; Bernstein, Eugene F.; Ausman, Robert K.; Blum, John A.; and Bonnabeau, Raymond C.: Treatment of acute renal failure. Experience of the artificial kidney team at the University of Minnesota Hospitals in 1959, 89
Dodge, Arnold H.: Concepts of medical supply assessment in terms of disaster preparedness. 287
Drug Addiction and Alcoholism, 445
Dumping Syndrome, the nature of, 56

E

Electrode for Complete Heart Block, Clinical Use of a Permanently Implanted Bipolar Myocardial, 16
Ellison, Evan S.: Differential diagnosis of knee injuries, 221
Emboli, Arterial and Atrial Fibrillation, the significance of, in surgery of the mitral valve, 148
Emotional Stress in the etiology of Coronary Heart Disease, 155
Endometriosis and Adenomyosis, Some Facets of, 472
Endotoxin and Anaphylaxis Shock, The Role of Serotonin in, 417
Erich, John B.: Scalp, total avulsion, 233
Etiology of Coronary Heart Disease, Emotional Stress in the, 155
Etzwiler, Donnell D.: Camp Needlepoint 1960, Minnesota's Camp for Diabetic Children, 334

EDITORIALS

Alcoholic, The, 497
A Pediatrician Looks at Child Psychiatry, 346
A Revaluation of the Term Physical Examination, 397
Bio-Medical Library, 170
Board of Regents for American College of Surgeons Inspection of Professional Records, 32
Civil Defense Control Center, 294
Disaster Medical Care in the Sixties, 295
Drug Eruptions, 435
Eat and Run, 173
Eight Goats, Three Apples, 211
Electrophoresis, 345
Emotional Factors in Coronary Occlusion, 124, 117, 211
Importance of Art in the Art of Living, 173
Informing Patients Regarding Hypochondriacal Complaints, 125
Kenny Rehabilitation Institute, 437
Medico-Legal Interprofessional Relationship, 250
New Editor-in-Chief, 31
Nomenclature and Diagnosis in Coronary Diseases, The Role of Effect, 394, 436
People Need People, 499
Post-Graduate Education in the Voluntary Non-Profit Hospital, 349
Preparedness - Secondly Only to Keeping Peace, 294
Roentagen Examination in Massive Gastrointestinal Bleeding, 80
Should We Nibble?, 554
Some Notes on the Present Status of Minnesota Obstetrics and Gynecology, 550
Tattoos — Their Value, 557
Therapy of Complete Heart Block, 31
Trading Ulcer Pain for Dumping Syndrome can be a Poor Bargain, 79
Wells, Arthur H. An Appreciation, 27

F

Ferrand, Paula T.; Peterson, Gordon and O'Neill, Richard: A follow-up study of discharged patients on Thiopropazate Dihydrochloride (Dartal) medication. 103
Fibrillation, The Significance of Atrial Fibrillation and Arterial Emboli in Surgery of the Mitral Valve, 148
Fibrosis of the Pancreas, Therapy of Cystic, 307
Finkelnburg, William O.: Traumatic rupture of the diaphragm, 13
First Aid, Requirements for Training In and Hospital Procedures, 268
Fisher, Isadore: Topical Antibiotics, 227
Fistulas, Congenital Arteriovenous of the Extremities, 160
Fleming, D. S.: Biological Warfare could wipe out our civilization, 259
Flint, Jack G.: Biological warfare and the livestock industry, 279
Flom, Robert S.; Peterson, Donald H. and MacLean, Lloyd D.: Diagnosis and treatment of arterial injuries, 133
Fractures, Slipping Ankle, 159
Frazier, R. E.: Chemical Warfare another serious hazard, 283

G

Gasserian Compression for Trigeminal Neuralgia, 20
Gastrectomy, Catheter Duodenostomy, in, 181
Gastrectomy, following partial, Long-Term Survival of Carcinoma of the Stomach, 52
Geraci, Joseph E.; Prickman, Louis E. and Riggs, Byron L., Jr.: Untoward reactions to antibiotics, 406
Golden, Jules S.: Traumatic Syndrome — recognition and treatment, 24
Grave's Disease, Gastrointestinal Maskings of, 505
Gregory, Ian: Alcoholism and Drug Addiction, 445
Griseofulvin in the Treatment of Dermatomycoses, 422

H

Hamlin, Mary E.: Malaria is under attack around the world, 530
Handler, Seymour and Blank, Norman: Sarcoidosis as a cause of portal hypertension and esophageal varices, 363
Hannaford, Jule M.: The Minnesota Professional Corporation Act . . . Background. Advantages. Provisions. Problems, 483
Hashimoto's Struma, Clinical and Surgical Aspects, 503
Hay-Fever Pollens of Southeastern Minnesota, 522
Hemorrhage, Massive Colonic, 41
Henderson, Lowell L.: Hay-Fever Pollens of Southeastern Minnesota, 522
Hibbs, John S.: 1961 Income Tax Guide for Physicians, 534
Hirschhorn, Kurt; Sklarin, Burton S.; and Seegers, Winnifred: Types and differential diagnosis, Hyperlipemia, 359
History of Medicine in Sherburne County Prior to 1901, 238
Hitchcock, Claude R. and Strobel, Claire: Abdominal Penetrating Wounds, 143
Hitchcock, Claude R. and Strobel, Claire: A description of seven cases of spastic ileus of the colon, 185
Hoegh, Leo A.: Medical profession and civil defense, 291
Hospital Assignments for Dentists, 278
Hospital Organization for Disasters and Evacuation, 275
Hoyer, L. J.: Peripheral Arterial Insufficiency, 366
Hunter, Samuel W.; Roth, Norman A.; Absolon, Karel and Noble, J. Lawrence: Clinical use of a permanently implanted bipolar myocardial electrode for complete heart block, 16
Hyperlipemia, Types and Differential Diagnosis, 359
Hyperparathyroidism, Primary, 510
Hypertension in the Lesser Circulation, Chest Pain Associated with, 374

I

IBM Tabulating Methods, The use of in the analysis of medical data, 382
Incompetent Cervicals as a Factor in Habitual Abortion, The Value of Shirodkar Operation, 224
Injuries, Knee, differential diagnosis of, 221

IN MEMORIAM

Adams, Bertram (Dec.) A-39
Ahrens, Albert E. (April) A-53
Albrecht, H. H. (March) A-53
Allen, Edgar V. (August) A-43
Binger, Henry E. (May) A-47
Brown, Edgar Dwight (Dec.) A-39
Brown, John C. (January) A-51
Callahan, Francis F. (May) A-47
Collie, Henry G. (May) A-47
Collins, Joseph S. (May) A-47
Danielson, Karl A. (February) A-39
Dordal, John (September) A-55
Erickson, George P. (June) A-37
Eshelby, Ezra C. (August) A-43
Gray F. D. (May) A-47
Gully, Raymond J. (November) A-45
Haggard, George D. (April) A-53
Hallenbeck, Dorr Foster (February) A-39
Hayes, James M. (March) A-53
Hendrickson, John F. (July) A-33
Huxley, Frederick R. (July) A-33
Johnson, Adelaide M. (January) A-51
Jolin, Francis M. (February) A-39
Kamman, Gordon R. (Nov.) A-45
King, George L. (December) A-39
Koenigsberger, Charles (March) A-53
Koepcke, Gerald M. (May) A-47
Kosiak, John, Jr. (March) A-54
Larson, Clarence M. (September) A-55
Leibold, Herbert H. (April) A-53
Lerche, William (April) A-53
McEnaney, Clifford T. (November) A-45
McQuarrie, Irvine (November) A-45
Melzer, George R. (August) A-43
Merkert, George L. (March) A-54
Meyer, Anthony A. (January) A-51
Norris, Neil T. (May) A-47
Paulson, Theodore S. (September) A-55
Person, J. Paul (August) A-43
Peterson, Nordahl P. (January) A-51
Peterson, Oliver H. (May) A-47
Quanstrom, Virgil E. (August) A-43
Robilliard, Charles M. (June) A-27
Rose, John Townsend (August) A-43
Ryan, William J. (February) A-40
Sadler, William P. (March) A-54
Sahr, Walter G. (August) A-43
Schaaf, Frederick H. K. (November) A-45
Schuldt, Frederick C. (October) A-51
Schulze, Alfred G. (September) A-55
Sommers, Ben (December) A-39
Starekow, Milton D. (October) A-51
Syverton, Jerome T. (March) A-55
Wagener, Henry P. (June) A-37
Williams, Arthur B. (August) A-43

J

Jensen, W. Kenneth; Schmidt, W. Robert and Culligan, John A.: Palliation in Non-Resectable Adenocarcinoma of the Cardia, Description of a new technique, 6
Johnson, Virginia E. and Masters, William H.: Treatment of sexually incompatible family unit, 466
Judd, Edward S. and Brown, Paul M.: Thyroglossal Cysts and Sinuses in children, results of the sistrunk operation, 516

K

Kerkhof, Arthur C.: Problem in the care of the Aged and Senile, 93
Kezdi, P.; Wehrmacher, W. H. and Kuroda, Kason: Chest pain associated with hypertension in the lesser circulation, 374
Kierland, Robert R.: Neurodermatitis, 401
Knee Injuries, differential diagnosis of, 221
Kuroda, Kason; Kezdi, P.; and Wehrmacher, W. H.: Chest pain associated with hypertension in the lesser circulation, 374

L

Lactation, Persistent, Abnormal, 188
Lam, Conrad R. and Taber, Rodman E.: The significance of Atrial Fibrillation and Arterial Emboli, in surgery of the mitral valve, 148
Livestock Industry and Biological Warfare, 279
Lofsness, Stanley V.; Thomford, Neil R.; Tveten, Omar A. and Sarnecki, M. M.: Primary Hyperparathyroidism, 510
Lundeberg, Karl R.: Civil Defense, Medical organization of target Cities, 263
Lymphoproliferative Disease, Blood Smears in, 1
Lynch, Francis W.; Tuura, James L. and Anderson, Duane R.: Griseofulvin in the treatment of dermatomycoses, 422
Lysyj, Anatol and Spellacy, William: Report of Case, Brenner Tumor, 204

LETTERS TO THE EDITORS

California Disaster Office Congratulations, (November) 500
Cigarette Advertising, (November) 500
Graduate & Post-Graduate Medical Education, (September) 398
Pharmaceutical Manufacturers Assn. Acknowledgment, (November) 500
Telephone Calls, (June) 253

M

MacLean, Lloyd D.; Flom, Robert S. and Peterson, Donald H.: Diagnosis and treatment of arterial injuries, 133
Malaria is under Attack around the World, 530
Masters, William H. and Johnson, Virginia E.: Treatment of sexually incompatible family unit, 466
Mattson, Hamlin: Catheter duodenostomy in gastrectomy, 181
Maxeiner, Stanley R.: Minneapolis Academy of Medicine, 380
May, Mark and DeRusso, Franklin: Congenital aortic stenosis, 312
Median Neuropathy, Autogenous, diagnosis and treatment, 109

Medical Profession and Civil Defense, 291
Medical Supply Assessment, Concepts of, in Terms of Disaster Preparedness, 287
Meeker, William R. and Davis, Richard B.: The role of Serotonin in Anaphylaxis and Endotoxin Shock, 417
Merrick, Robert L.: Gasserian Compression for Trigeminal Neuralgia, 20
Miller, Harold E.; Schaaf, Frederick H. K. and Nuessle, William F.: A case report of suspected botulism, 192
Minneapolis Academy of Medicine, 380
Mitral Valve, The Significance of Atrial Fibrillation and Arterial Emboli in Surgery of the, 148
Moos, Daniel L.: Massive Colonic Hemorrhage, 41
Mulder, Donald W.: Diagnosis and treatment of autogenous median neuropathy, 109

MEDICAL ECONOMICS

Doctors, Insurance Companies Unite to Hold Medical Costs, 37
Group Medical Practices Show Rapid Growth in U. S., 38
Inform Yourself and Others About Proposed Socialized Medicine Legislation, 215
Kennedy Administration Eldercare Trends Outlined, 129
King Bill (H.R. 4222) 440
Medical Care for Eye Patients, 440
Minnesota Survey Shows Aged Can Pay Medical Bills, 175
Physician Hospital Admission Practices Surveyed, 36
Physician Medicare Procedures Outlined, 130
Socialized Medicine Legislation, 254
Survey Gives Profile of Minnesota Senior Citizens, 176

MEDICAL EDUCATION

A.M.A. Reaffirms Foreign Physician Policy (January) A-47
Area Foreign Physicians Fair Well in ECFMG Exams (January) A-46
Examination Failure Means Curtailed U. S. Stay (January) A-47
Foreign Medical Graduates Increase in 1960-61 (October) A-43
Medical Student Center Planned at Minnesota "U" (July) A-28
Must Pass Tests Now Before Entering U. S. (January) A-47
Qualified Doctors — Every Patient's Right (January) A-47

MEETINGS & ANNOUNCEMENTS

January A-53
February A-41
March A-59
April A-56
May A-43
June A-29
July A-29
August A-38
September A-47
October A-45
November A-43
December A-33

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

"Counselor" Given 90 Day Term, (April) A-50
88 Year Old Quack Doctor Jailed (April) A-50
Former Hospital Employee Sentenced for Unlawfully Attempting to Obtain Barbital Drug (January) A-48
Four Persons Sentenced in Minneapolis on Abortion Conspiracy Charge (March) A-47
Jury Finds "Hair Specialist" Guilty of Basic Science Violation at St. Cloud (February) A-37
Minneapolis Man Sentenced for Violating Basic Science Law by Forging Physician's Signature in Order to Obtain Drugs (August) A-37
Minneapolis Woman Sentenced on Abortion Charge (January) A-48
Minneapolis Woman Sentenced for Obtaining Barbital Drug Without a Legal Prescription (January) A-48

MISCELLANEOUS

Anal Sphincter, 329
Annual Meeting Preview, 214
Booster Shots Recommended, 333
Cancer-Smoking Legal Decision, 166, 388
Health Services in An Emergency, 267
Look for the Good, Too, 453
Medico, Inc., 465
Minnesota Blue Shield: (January) A-45, (February) A-36, (March) A-45, (April) A-49, (May) A-41, (June) A-27, (July) A-27, (September) A-45, (October) A-41, (November) A-41, (December) A-31
Minnesota Civil Defense & Disaster Blood Program, 273
Minnesota Civil Defense Hospital Organization for Disasters in Non-Target Areas, 283
Multiple Myeloma Survival Rate, 147
1960 Income Tax Guide for Physicians, 66
1961 Income Tax Guide for Physicians, 534
Outpatient Service for the Cardiac Program, 325
Puzzling Clinical Entity, 154, 333
Quoting the Annual Meeting Speakers, 301
Special House of Delegates Meeting Reviewed, 127
Tests Suggested as Routine Practice, 126
Varied Actions Taken by the House of Delegates, 299

N

Neel, Harry B.: Some Facets of Adenomysosis and Endometriosis, 472
Nelson, Edward N. and Olsen, Jay R.: Calming the irritable infant with a simple tonal device, 527
Nelson, Loren E.: Anal surgery in infants and children, 326
Neuralgia, Gasserian Compression for Trigeminal, 20
Neurodermatitis, 401
Neuropathy, Diagnosis and Treatment of Autogenous Median, 109
Noble, J. Lawrence; Hunter, Samuel W.; Roth, Norman A. and Absolon, Karel: Clinical use of a permanently implanted bipolar myocardial electrode for complete heart block, 16
Non-Resectable Adenocarcinoma of the Cardia, Palliation in, Description of a New Technique, 6
Nuessle, William F.; Miller, Harold E. and Schaaf, Frederick H. K.: A case report of suspected botulism, 192
Nutrition in Medical Practice — Past and Present, 454

O

O'Neill, Richard; Ferrand, Paula T. and Peterson, Gordon: A follow-up study of discharged patients on thiopropazate dihydrochloride (Dartal) medication, 103
Obstetrical and Gynecological Society, A Quarter Century of the Minnesota, 476
Olsen, Jay R. and Nelson, Edward N.: Calming the irritable infant with a simple tonal device, 527
Ovarian Giant Cyst of the Newborn, 330

P

Palliation in Non-Resectable Adenocarcinoma of the Cardia, Description of a New Technique, 6
Pankey, George A.; Walder, Arnold; Reiser, Milton P.; Bernstein, Eugene F.; Ausman, Robert K.; Blum, John A.; Bonnabeau, Raymond C.; and Doberneck, Raymond C.: Treatment of acute renal failure. Experience of the artificial kidney team at the University of Minnesota hospitals in 1959, 89
Paulson, Elmer and Rea, Charles E.: Hashimoto's Struma, clinical and surgical aspects, 503
Peripheral Arterial Insufficiency, 366
Persistent, Abnormal Lactation, 188
Peterson, Donald H.; MacLean, Lloyd D. and Flom, Robert S.: Diagnosis and treatment of arterial injuries, 133
Peterson, Gordon; Ferrand, Paula T. and O'Neill, Richard: A follow-up study of discharged patients on thiopropazate dihydrochloride (Dartal) medication, 103
Pfeiffer, Josie W. and Rosenthal, Robert: History of Medicine in Sherburne County Prior to 1901, 238
Prickman, Louis E.; Riggs, Byron L., Jr. and Geraci, Joseph E.: Untoward reactions to antibiotics, 406
Professional Corporation Act, The Minnesota. Background. Advantages. Provisions. Problems, 483

PRESIDENT'S LETTER

Character We Build Our Destination, 298
Committee on Scientific Assembly, 77
Everyone Should Be President, 549
Federal Aid to Education, 495
Hospital of Today, 433
Memo: Re: 1961 State Meeting, 297
New Frontiers Unlimited, 122
108th Annual Meeting, 169
Our Changing Profile, 209
Public Relations — Front and Center, 392
Relative Value Study — First Order Business, 34
Renville Hospital Survey of Hospital & Physician Costs for Medical Care of Aged, 168
Sounds of the Sixties, 247
Your AMA Representatives, 343

R

Rea, Charles E. and Paulson, Elmer: Hashimoto's Struma, clinical and surgical aspects, 503
Read, Raymond C.: the nature of the dumping syndrome, 56
Regional University Medical Centers, What Do Practicing Physicians Expect of the, 196
Reiser, Milton P.; Bernstein, Eugene F.; Ausman, Robert K.; Blum, John A.; Bonnabeau, Raymond C.; Doberneck, Raymond C.; Pankey, George A. and Walder, Arnold: Treatment of acute renal failure. Experience of the artificial kidney team at the University of Minnesota Hospitals in 1959, 89
Renal Colic, 99
Renal Failure, Treatment of. Experience of the Artificial Kidney Team at the University of Minnesota Hospitals in 1959, 89
Riggs, Byron L., Jr.; Geraci, Joseph E. and Prickman, Louis E.: Untoward reactions to antibiotics, 406
Rogers, Frank A.: The use of IBM tabulating methods in the analysis of medical data, 382
Rosenthal, Robert and Pfeiffer, Josie W.: History of medicine in Sherburne County prior to 1901, 238
Roth, Norman A.; Absolon, Karel; Noble, J. Lawrence and Hunter, Samuel W.: Clinical use of a permanently implanted bipolar myocardial electrode for complete heart block, 16
Russek, Henry I.: Emotional stress in the etiology of coronary heart disease, 155

S

Sach-Rowitz, Alvan: Requirements for training in first aid and hospital procedures, 268
Sadler, William P.: Incompetent cervicals as a factor in habitual abortion, the value of Shirodkar Operation, 224
Sarcoidosis, as a Cause of Portal Hypertension and Esophageal Varices, 363
Sarnecki, M.M.; Lofsness, Stanley V.; Tveten, Omar A. and Thomford, Neil R.: Primary hyperparathyroidism, 510
Scalp, Total Avulsion, 233
Schaaf, Frederick H.K.; Nuessle, William F. and Miller, Harold E.: A case report of suspected botulism, 192
Schmidt, W. Robert; Culligan, John A. and Jensen N. Kenneth: Palliation in non-resectable adenocarcinoma of the cardia, description of a new technique, 6
Schroder, Albert J.: Therapy of cystic fibrosis of the pancreas, 307
Seegers, Winnifred; Hirshchorn, Kurt and Sklarin, Burton S.: Hyperlipemia, types and differential diagnosis, 359
Senile and Aged, Problems in the Care of the, 93
Serotonin, The Role of, in Anaphylaxis and Endotoxin Shock, 417
Sexually Incompatible Family Unit, Treatment of, 466
Shirodkar Operation, The Value of, Incompetent Cervicals as a Factor in Habitual Abortion, 224
Sinuses and Thyroglossal Cysts in Children, Results of the Sistrunk Operation, 516
Sistrunk Operation, Results of. Thyroglossal Cysts and Sinuses in Children, 516
Sklarin, Burton S.; Seegers, Winnifred and Hirschhorn, Kurt: Hyperlipemia, Types and Differential Diagnois, 359
Spastic Ileus of the Colon, a Description of Seven Cases, 185
Spellacy, William and Lysyj, Anatol: Report of Case, Brenner Tumor, 204
Sponsel, Kenath H.: Ankle fractures, slipping, 159
Stenosis, Congenital Aortic, 312
Strobel, Claire J. and Hitchcock, Claude R.: Abdominal Penetrating Wounds, 143
Strobel, Claire J. and Hitchcock, Claude R.: Spastic ileus of the colon, a description of seven cases, 185
Struma, Hashimoto's, Clinical and Surgical Aspects, 503

SUPPLEMENTS

Annual Meeting Program, April
Index, Volume 44, December
Minnesota State Medical Association Roster, June

SYNDROME

Abdominal Migraine, 183
Achard-Thiers, 191
Agammaglobulinemia, 509
Anxiety-Tension-Fatigue, 261
Carpal Tunnel, 285
Crocodile Tears, 369
Cushing's, 213
Egg White (Biotin Deficiency), 465
Farmer's Lung, 416
Harris', 475
Laughing Death (Kuru), 290
Lilliputian, 223
Meconium Ileus, 338
Milk Drinkers (Burnett's), 252
Parathyroid-Pituitary, 515
Peutz-Yaeger, 471
Silo Filler's, 285

T

Taber, Rodman E. and Lam, Conrad R.: The significance of arterial emboli and atrial fibrillation, in surgery of the mitral valve, 148
Tama, Lawrence and Walters, Waltman: Long-term survival of carcinoma of the stomach, following partial gastrectomy, 52
Therapy of Cystic Fibrosis of the Pancreas, 307
Thiopropazate Dihydrochloride (Dartal) Medication, A Follow-Up Study of Discharged Patients on, 103
Thomford, Neil R.; Tveten, Omar A.; Sarnecki, M.M. and Lofsness, Stanley V.: Primary hyperparathyroidism, 510
Thyroglossal Cysts and Sinuses in Children, Results of the Sistrunk Operation, 516
Tonal Device, Calming the Irritable Infant with a Simple, 527
Topical Antibiotics, 227
Traumatic Rupture of the Diaphragm, 13
Traumatic Syndrome — Recognition and Treatment, 24
Treatment and Diagnosis of Arterial Injuries, 133
Trigeminal Neuralgia, Gasserian Compression for, 20
TSH Test, Fatal Coronary Occlusion, Following, 370
Tuberculin Testing in Pennington County, 428
Tumor, Brenner, Report of Case, 204
Tuura, James L.; Anderson, Duane R. and Lynch, Francis W.: Griseofulvin in the Treatment of Dermatomycoses, 422
Tveten, Omar A.; Sarnecki, M.M.; Lofsness, Stanley V. and Thomford, Neil R.: Primary hyperparathyroidism, 510

U

University Medical Centers, What do Practicing Physicians Expect of the Regional, 196
Untoward Reactions to Antibiotics, 406

V

Vix, Vernon A.: Lactation, Persistent, Abnormal, 188

W

Walder, Arnold; Reiser, Milton P.; Bernstein, Eugene F.; Ausman, Robert K.; Blum, John A.; Bonnabeau, Raymond C.; Doberneck, Raymond C.; and Pankey, George A.: Treatment of acute renal failure. Experience of the artificial kidney team at the University of Minnesota hospital in 1959, 89
Walters, Waltman and Tama, Lawrence: Long-term survival of carcinoma of the stomach, following partial gastrectomy, 52
Wehrmacher, W.H.; Kuroda, Kason and Kezdi, P.: Chest pain associated with hypertension in the lesser circulation, 374
Wells, Arthur H.: An Appreciation, 27
What the Generalist thinks of the Radiologist, 112
Whitney, N.R.: Tuberculin Testing in Pennington County, 428
Woodley, Donald: Gastrointestinal Masking of Grave's Disease, 505

WHAT IS YOUR DIAGNOSIS?

Acute Pancreatitis (Oct.) 405
Cryoglobulinemia (Feb.) 55
Granulosa-cell Tumor (Nov.) 471
Hyperglycemic Reaction (March) 128
Infarct of Fallopian Tube (June) 231
Pelvic Abscess (Dec.) 509

WOMAN'S AUXILIARY

A Reminder (June) A-33
An Urgent Message (August) A-41
Fall School of Instruction (July) A-31
Final Plans Made for 39th Annual Meeting (May) A-44
Hennepin County Activities (February) A-40
Highlights (May) A-44, (June) A-33
Mid-Winter Board Meeting Reviewed (March) A-57
National Auxiliary Meeting (May) A-44
Our Challenge of the 60's (June) A-33
Recap (July) A-30
39th Annual Meeting Program Outlined (April) A-55
Your County Societies (January) A-49

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